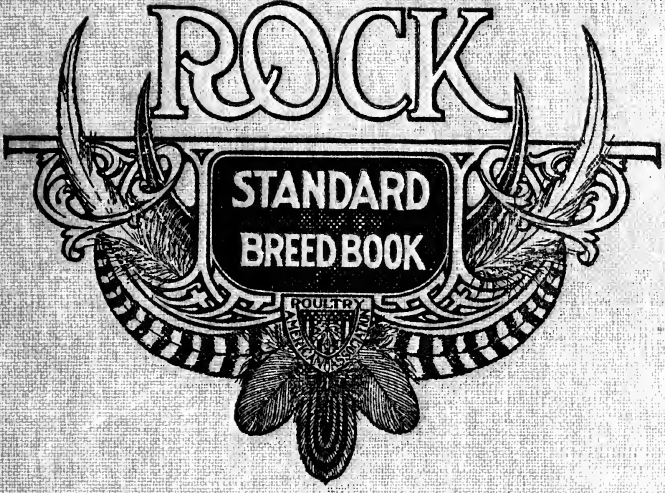
PLYMOUTH ROCK



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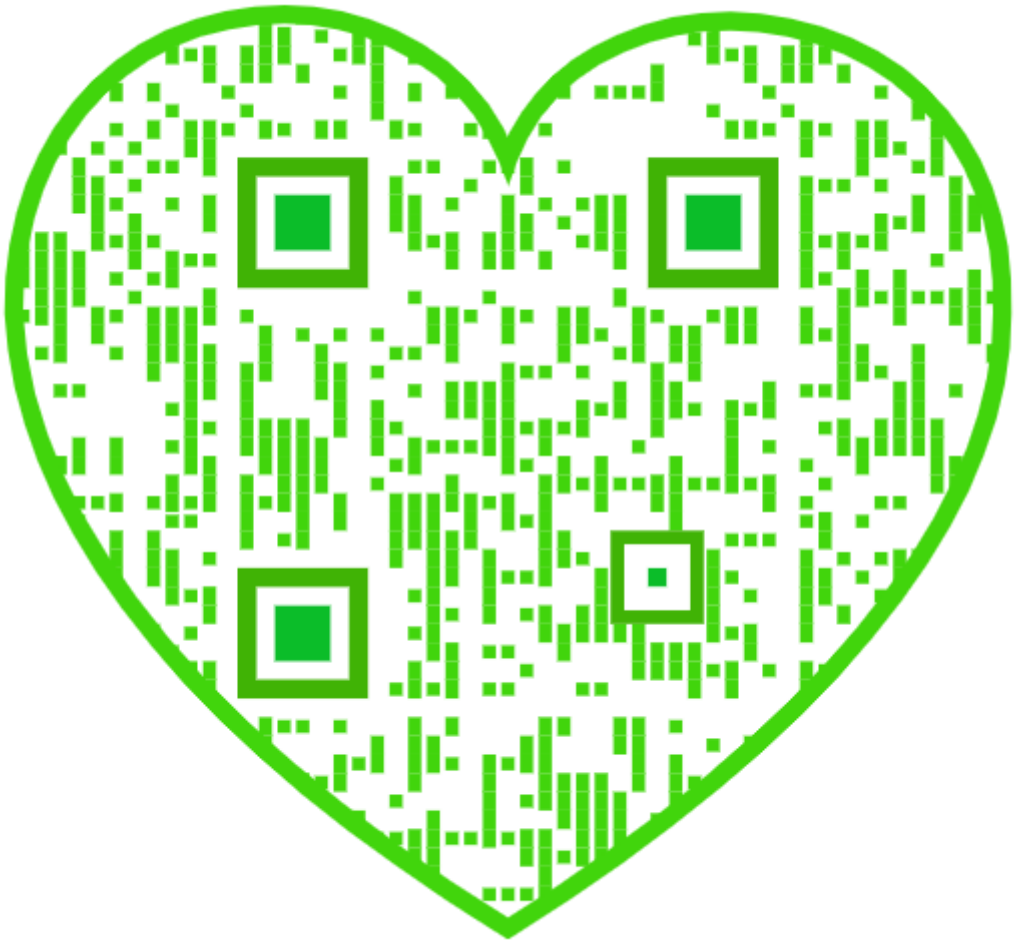

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The Plymouth Rock Standard and Breed Book

A COMPLETE DESCRIPTION OF
ALL VARIETIES OF PLYMOUTH ROCKS, WITH THE TEXT IN FULL FROM THE LATEST (1915) REVISED EDITION OF THE AMERICAN STANDARD OF PERFECTION AS IT RELATES TO ALL VARIETIES OF PLYMOUTH ROCKS

ALSO, WITH TREATISES ON BREEDING, REARING, FEEDING, HOUSING, CONDITIONING FOR EXHIBITIONS, EXHIBITING — ETC.

BY A. C. SMITH
PROFESSOR OF POULTRY HUSBANDRY UNIVERSITY OF MINNESOTA AND CONTRIBUTING AUTHORS
(See List of Contributing Authors on Page Nine)

ILLUSTRATIONS
BY FRANKLANE L. SEWELL

Printed and Published by
THE AMERICAN POULTRY ASSOCIATION

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INTRODUCTION

TO THE 1915 REVISED EDITION OF THE AMERICAN STANDARD OF PERFECTION

THE organization of the American Poultry Association was effected at Buffalo, New York, February, 1873, by delegates from different state and county associations, prominent breeders, fanciers, and other interested persons from different sections of the United States and Canada. Mr. W. H. Churchman of Wilmington, Delaware, was the first president and Mr. J. M. Wade of Philadelphia, the first secretary.

At that time the fundamental object of this organization was to standardize the different varieties of domestic and ornamental fowls, and to that end, a complete Standard of Excellence, for all varieties then recognized, was formulated and adopted which was recommended as the guide for judging at all poultry exhibitions. The American Poultry Association has since broadened its scope and annual conventions have visited nearly all of our large industrial centers.

The first edition of the Standard was issued in February, 1874. It has been followed by several revised editions, but the work of the first Standard makers was so thorough, accurate and far-seeing that but few changes, and these of minor importance, have been necessary. Many new breeds and varieties, nearly all of later origin, have been admitted. After a few editions, the title "Standard of Excellence" was changed to read "Standard of Perfection" as one, theoretically at least, more in accord with its prescribed ideals.

Until 1905, all editions contained text descriptions only, and no attempt was made to delineate ideal fowls. The 1905 edition contains this innovation. The illustrations were line drawings by the best known poultry artists of that time. These were received with approval, in sufficient measure so that the plan of presenting outline illustrations of many of the leading varieties were continued. The type of illustrations was, however, changed

1822

to half-tone illustrations of retouched and idealized photographs of living specimens. These appeared in the 1910 edition after having been approved by the Thirty-fifth Annual Convention.

It has been the general policy of the American Poultry Association to revise the Standard of Perfection every five years, this work being most carefully done by Revision Committees chosen to represent as far as possible the interests of all sections of the country and of the different breed classifications.

The last Revision Committee was appointed at the Thirty-sixth Annual Meeting at Denver, Colorado, 1911, and the present or 1915 edition of the Standard of Perfection includes the changes and additions made by this Committee with such further changes or amendments as were voted by the Association at its Thirty-eighth and Thirty-ninth Annual Meetings in 1913 and 1914.

The 1915 Standard is the basis for the present work, "The Plymouth Rock Standard and Breed Book," every detail applying to this breed in the main Standard being reproduced verbatim in this work.

PREFACE

TO THE PLYMOUTH ROCK STANDARD AND BREED BOOK

FOR a number of years there has been a growing demand among poultry breeders for the publication by the American Poultry Association of what are popularly known as Separate Breed Standards—a series of books, each one containing the official Standard description of a single breed, and in addition, reliable and authoritative information in regard to the actual breeding of such fowls.

This work the Association has now undertaken and this Plymouth Rock Breed Standard, the first of the series, will be followed promptly by the Wyandotte Breed Standard. It is the intention that additional numbers of the series shall follow as rapidly as is practicable.

The first step taken by the American Poultry Association toward the construction and publication of Breed Books, referred to at that time and even yet, as Breed Standards, was the adoption at the Thirty-second Annual Meeting, Buffalo, August 15, 1910, of a resolution presented by Grant M. Curtis.

The presentation and adoption of this resolution was the outcome of a demand, more or less general on the part of the breeders, for separate "Breed Standards," each of which would describe completely one breed only, in addition to the complete work, the "American Standard of Perfection," which gives a description of best shape and color type of all breeds and varieties recognized by the American Poultry Association, as well as illustrations of both the ideal male and female of many of the leading varieties; also, rules by which all breeds and varieties are judged at the poultry exhibitions of the United States and Canada, and graphic illustrations of the ideal comb, feather markings and the most common defects of standard fowls in shape, color, and markings.

By the terms of the resolution, the scope of the work was much more comprehensive than the breeders in general had

expected, and yet, by subsequent action of the Association, the scope of this work was to be still greatly enlarged. In another section will be noticed the method of ascertaining by eminently fair means the relative popularity in the United States and Canada of the different Standard breeds of poultry.

The report of the Secretary-Treasurer at the Thirty-third Annual Meeting of the Association in August of 1908, showed that, according to the certified reports of the Secretaries of Poultry Associations, holding shows between October 31st, 1907, and March 1st, 1908, in the United States and Canada, the Plymouth Rocks led all other breeds in number of birds exhibited.

At the Thirty-sixth Annual Meeting at Denver, August 6-9, 1911, a resolution was passed, providing for a Plymouth Rock Breed Standard, as the first in the series, and creating a committee to edit and publish the same.

The Committee appointed, consisting of D. M. Green, S. A. Noftzger, W. C. Denney, U. R. Fishel and A. C. Smith as Chairman, representing, as actual breeders, five of the six Plymouth Rock varieties. As yet, the scope of the work has not extended beyond that outlined earlier in this article, the idea being to give besides the descriptions, illustrations, definitions, graphic sketches, instructions to judges, etc., as found in the Standard of Perfection, a more complete history of each variety, a more complete and clearer description of the shape and plumage, the common defects of each, and colored illustrations of the best natural feathers that could be secured.

The committee as above named, presented a report with complete manuscript, but with no new illustrations, to the Thirty-seventh Annual Convention at Nashville, Tennessee, 1912, but because the time to elapse before the next revision was held to be too short to warrant the expense of a work of this kind, the Association voted to withhold publication until after the next (1915) general revision of the Standard of Perfection.

At the Thirty-eighth Annual Meeting at Atlantic City, August, 1913, this committee sat in conference with the leading breeders of Plymouth Rock varieties and others interested and as the result of these conferences, the committee made a report which outlined a breed standard embodying several new features, such as articles on single and double matings, articles especially adapted to the needs of beginners on mating the different varieties, illustrations showing the relative proportions of the different

sections, and the various markings found in the plumage of the different varieties.

The Thirty-eighth and Thirty-ninth Annual Meetings merely ratified the action of the Thirty-seventh in expressing a determination to publish Breed Standards after the publication of the 1915 Revision of the Standard of Perfection, which was not effected until the Fortieth Annual Meeting at San Francisco, November, 1915.

By the action of the Association at this meeting, the Breed Standards were put into the hands of the Standing Standard Committee, and by the terms of the same resolution, this committee was empowered to employ artists, clerks, editors, etc., to proceed with the work, the expense of which was to be met by an appropriation of the Association of $2,000.

A Breed Standard Committee was appointed at the San Francisco meeting, consisting of

Grant M. Curtis
E. E. Richards
Arthur C. Smith
W. S. Russell
W. R. Graham

This Committee held a meeting at San Francisco immediately after the adjournment of the Convention and another was held later at Buffalo, New York.

This meeting, in April, 1916, was attended by Messrs. Curtis and Smith for the committee, the late Secretary Campbell representing President Richards, Artists Sewell and Schilling, and a few members of the Association who were called for consultation. At this meeting the text and illustrations for the breed Standards were outlined in detail and a complete table of contents adopted, work upon which immediately began. Many of these illustrations were exhibited at the Forty-first Annual Meeting at Cleveland, Ohio. The meeting received the report of the committee and an appropriation to complete this work and publish 3,000 copies was voted by the Association.

Later, the personnel of this committee was somewhat changed by the resignations of Messrs. Curtis and Graham and the appointments of Messrs. H. A. Nourse and T. F. McGrew.

INTRODUCTION

THAT the reader may get a correct understanding of the scope and purposes of both the American Standard of Perfection and the separate Breed Standards, a few explanatory statements will be made at this point. First, the separate Breed Standards are designed to supplement the Standard of Perfection and not to supplant it. Again, the Standard of Perfection is a fully illustrated, well printed, and neatly bound volume of 368 pages; that gives a complete though necessarily somewhat concise description of all breeds and varieties recognized by the American Poultry Association as Standard-bred poultry, as well as illustrations of both the ideal male and female of most of the leading varieties; also, rules by which all breeds and varieties are judged at the poultry exhibitions of the United States and Canada, and graphic illustrations of ideal combs, feather markings, and the most serious defects of standard-bred fowls in shape, color, and markings. It is the poultry breeder's official guide, and is almost indispensable to all who are directly interested in the breeding of what is commonly known as "pure-bred fowls."

For the separate Breed Standard, it has been argued that the average breeder who keeps only a single breed or variety is not as much interested in the description of the many other breeds found in this Standard. In practical application, he wants and greatly needs more than this—that is, reliable, practical instruction in how to mate and care for fowls of the particular breeds in which he is interested, in order that he may be able to produce as large a proportion as possible of specimens that shall approach closely to the ideals described and presented in the Standard of Perfection.

The present volume, as the first of the Separate Breed Standards represents a conscientious effort on the part of the committee to render this service to the breeders of Plymouth Rocks. This book contains everything that appears in the Standard of Perfection that relates directly to Plymouth Rocks. In addition it gives full detailed information on the breeding, exhibiting, rearing and marketing of such fowls.

Obviously, it is impossible for this committee to formulate definite rules, the application of which may be expected to bring

about the production of the highest exhibition qualities in Plymouth Rocks in every instance. The time may probably never come when hard and fast rules for all phases of breeding problems can be well laid down, but there is a vast difference between an attempt to achieve this seemingly impossible accomplishment and the policy of complete silence on the many problems that confront the breeder, especially the beginner, who, heretofore, has had no authentic source of information on the practical problems involved in the breeding of Standard fowls.

And we believe that most breeders, certainly most of those who are inexperienced, will welcome reliable information designed to solve the many difficult problems associated with this task; will appreciate having in complete and connected form a plain statement of the fundamental principles involved in this work, and will welcome reliable guidance in working out the details of the special problems that confront them. (H. T. J.)

LIST OF AUTHORS

The Association is indebted to Messrs. Homer T. Jackson for several articles in Part I, M. L. Chapman for the article on conditioning White Birds, to T. F. McGrew for the treatises on White and Silver-Penciled Plymouth Rocks, to H. A. Nourse for the treatise on Practical Poultry Keeping, and to T. E. Quisenbury and W. R. Graham for articles on Utility Features of Plymouth Rocks. Their initials are appended to the articles written by them. All articles not so appended were written by the Editor.

THE PLYMOUTH ROCK STANDARD AND BREED BOOK

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PART ONE

FUNDAMENTALS OF THE PLYMOUTH ROCK FOWL

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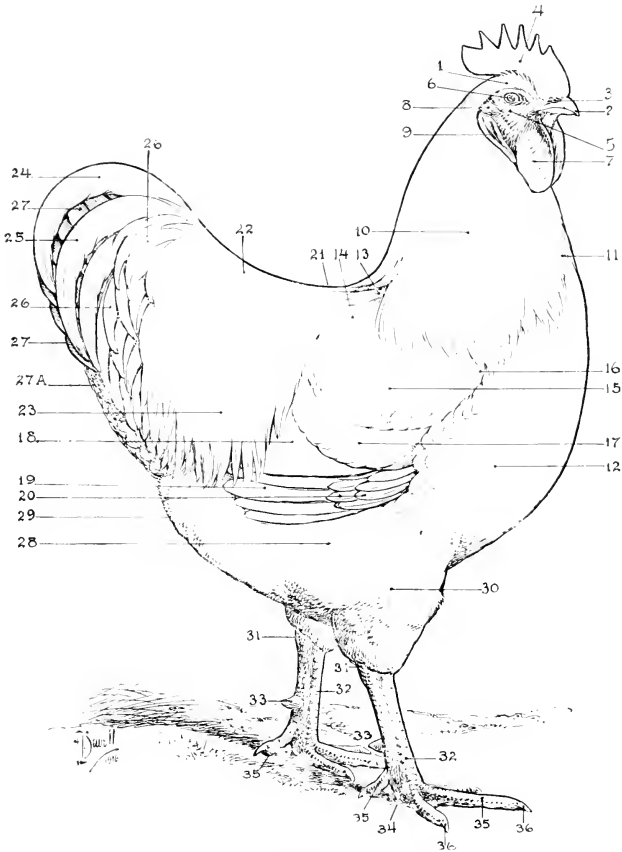

Figure 1
NOMENCLATURE
Diagram of Male

1	Head	11	Front of Hackle	20	Primary-coverts	28	Body Feathers
2	Beak	12	Breast	21	Back	29	Fluff
3	Nostril	13	Cape	22	Saddle	30	Thighs
4	Comb	14	Shoulder	23	Saddle feathers	31-31	Hocks
5	Face	15	Wing-bow	24	Sickles	32-32	Shanks
6	Eye	16	Wing-front	25	Smaller sickles	33-33	Spurs
7	Wattle	17	Wing-coverts, wing-bar	26	Tail-coverts	34-34	Feet
8	Ear	18	Secondaries, wing-bay	27-27	Main Tail feathers	35-35-35	Toes
9	Ear-lobe	19	Primaries, flights	27A	Under Tail-coverts	36-36	Toe Nails
10	Hackle						

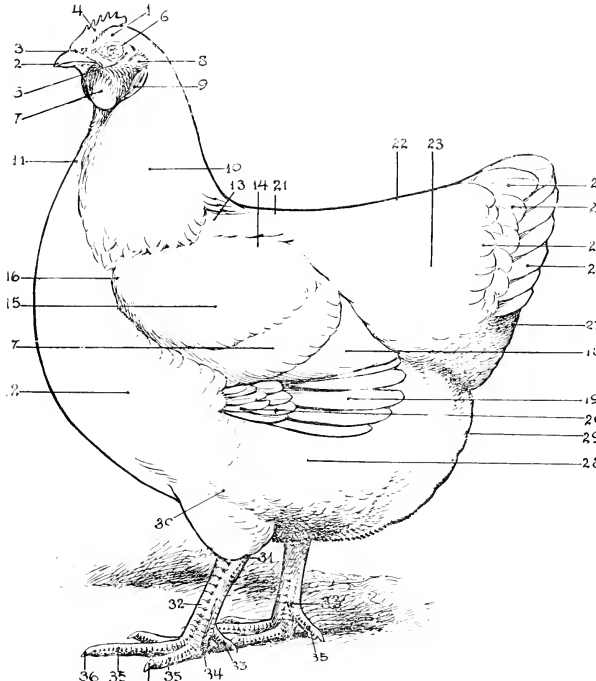

Figure 2

NOMENCLATURE

Diagram of Female

1 Head
2 Beak
3 Nostril
4 Comb
5 Face
6 Eye
7 Wattle
8 Ear
9 Ear-lobe
10 Neck
11 Front of Neck
12 Breast
13 Cape
14 Shoulder
15 Wing-bow
16 Wing-front
17 Wing-coverts
18 Secondaries, wing-bay
19 Primaries, flights
20 Primary-coverts
21 Back
22 Sweep of Back
23 Cushion
24 Tail-coverts
25 Tail-coverts
26 Tail-coverts
27 Main Tail Feathers
27A Under Tail coverts
28 Body Feathers
29 Fluff
30 Thigh
31 Hock
32 Shank
33 Spur
34 Foot
35-35 Toes
36-36 Toe Nails

SECTION I.

CHAPTER I.

GLOSSARY OF TECHNICAL TERMS

Barring.—Bars or stripes extending across a feather at right angles to its length, or nearly so. (See figures 3 and 4.)

Bay.—A rich brown-red; red with a brown tinge, similar to reddish chestnut. (Bay shows more red than mahogany. See mahogany.)

Figure 3. Barred Feather Ideal. (Female.)

Beak.—The projecting mouth parts of chickens and turkeys, consisting of upper and lower mandibles. (See figures 1 and 2.)

Black.—Absence of spectral color. The opposite or negative of white.

Blade.—The rear part of a single comb, back of the last well-defined point, usually extending beyond the crown of the head, smooth and free from serrations. (See figure 5.)

Bluish.—Pure blue does not appear in the feathers of fowls. The color termed blue or bluish by poultrymen is produced by a mixture of black and white with the addition of a small percentage of red pigment.

Brassiness.—Having the color of brass; yellowish. A serious defect in all varieties of Plymouth Rocks.

Breast.—As applied to fowls, this term is generally understood to mean that part which surrounds the fore part of the keel bone. (See figures 1 and 2.)

Breed.—A race of fowls, the members of which maintain distinctive shape characteristics that they possess in common. Breed is a broader term than variety. Breed includes varieties, as, for example, the Barred, White and Buff varieties of the Plymouth Rock breed.

Figure 4. Barred Feather. Ideal. (Male.)

Breeder.—A broad, general term that designates the poultry raiser who produces fowls for any special purpose, with the object of improving their value, or in conformity with an agreed standard of excellence.

Breeding In-and-In.—(See "inbreeding.")

Brown.—A color formed by mingling red, yellow and black.

Buff.—Standard buff color is a lustrous, orange yellow; sometimes described as a soft, brownish yellow.

Cape.—The short feathers on the back underneath the hackle, collectively shaped like a cape. (See figures 1 and 2.)

Carriage.—The attitude, bearing or style of a bird.

Chick.—The young of the domestic fowl, properly applied until the sex can be distinguished; sometimes used to designate specimens less than a year old.

Figure 5.
Ideal Comb for Plymouth Rock Male—Any and All Varieties.

Chicken.—Specifically, the young of the domestic fowl prior to the development of adult plumage; also used as a general term to designate all domestic fowls except turkeys, ducks and geese.

Class.—A group of fowls consisting of one or more breeds having a common place of origin or possessing certain special characteristics in common.

Cock.—A male fowl one year old and over.

Cockerel.—A male fowl less than one year old.

Comb.—The fleshy protuberance growing on top of a fowl's head. All varieties of Plymouth Rocks have single combs. (See figure 5.)

Condition.—The state of a fowl in regard to health, cleanliness and order of plumage.

Coverts.—(See tail, flight and wing-coverts.) (See figures 1 and 2.)

Creaminess.—Having the color of cream; light yellow.

Crop.—The enlargement of the gullet in which a fowl's food is accumulated before it passes to the gizzard.

Cushion.—The mass of feathers at the rear of back of a fowl, partly covering the tail. (See figure 2.)

Disqualification.—A deformity or serious defect that renders a fowl unworthy to win a prize.

Disqualified.—Applied to a fowl that is unworthy to win a prize.

Domestic Fowl.—An individual of the genus gallus domesticus.

Down.—The first hairy covering of chicks; also, the tufts of hair-like growth that sometimes are found on the shanks, toes, feet or webs of feet of fowls. (NOTE.—If the quill and web are discernible to the eye, it is a "feather.")

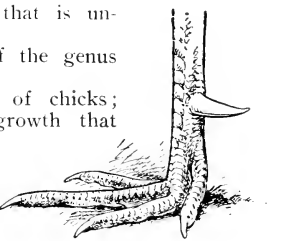

Figure 6.
Duck Foot (A Defect).

Duck-Footed.—The hind toe carried forward. (See figure 6.)

Ear-Lobe.—The fold of bare skin just below the ear. (See figures 1 and 2.)

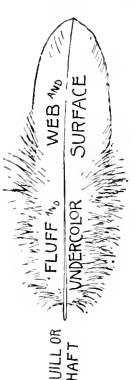

Figure 7.
Sections of a Feather.

Edging.—A narrow border of white or light color along the side or around the end of a darker colored feather.

Excrescence.—A disfiguring, abnormal or superfluous outgrowth.

Face.—The bare skin on the head of a fowl around and below the eyes. (See figures 1, 2 and 5.)

Faking.—Removing, or attempting to remove, foreign color from the face or ear-lobes when it is a disqualification; removing one or more side sprigs; trimming a comb in any manner; artificial coloring or bleaching of any feather or feathers; splicing feathers; injuring the plumage of any fowl entered by another exhibitor; plugging up holes in legs of smooth-legged varieties where feathers or stubs disqualify; staining of legs; in fact, any self-evident attempt on the part of an exhibitor to deceive the judge and thus obtain an unfair advantage in competition.

Fancier.—A breeder of poultry who seeks to produce chickens, turkeys, ducks or geese in conformity with an ideal or prescribed standard of excellence.

Figure 8.
"Frosting"

Feather.—A growth formed of a discernible quill or shaft and a vane (called "web") upon each side of it. (See figures 7 and 11.) (NOTE.—When quill is not discernible to the eye, it is **down.**)

Flights.—The primary feathers of the wing, used in flying but out of sight, or nearly so, when wing is folded. (See figures 1 and 2.)

Flight Coverts.—The short, moderately stiff feathers, located at the base of the wing primaries or flight feathers, and partly covering their quills. (See figures 1 and 2.)

Fluff.—The soft feathers about thighs and posterior part of fowl; also the soft downy part of a feather. (See figures 1 and 2.)

Foreign Color.—Any color on a feather that differs from the color prescribed for such feather as a part of the plumage of a Standard-bred fowl.

Fowl.—A term generally used to denote the common, domestic cock or hen.

Frosting.—A white or light colored marginal edging or tracing on feathers of laced or penciled varieties.

(This type of lacing (see figure 8) in the breast of a male, red in the case of the Partridge Plymouth Rock or silver white in the Silver-Penciled Plymouth Rock, may de-

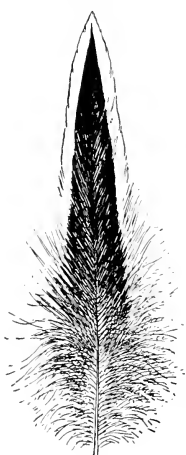

Figure 9.
Striped Neck Hackle Feather, Male (Ideal).

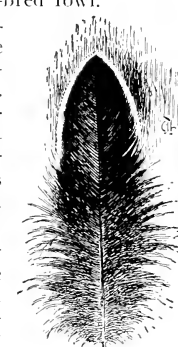

Figure 10.
Striped Neck Feather, Female (Ideal).

note that the specimen belongs to a line bred for production of exhibition females.)

Gray.—A color formed by blending white and black, frequently with a dash of red or other primary colors. In common usage, black modified by white to form a dull whitish tint.

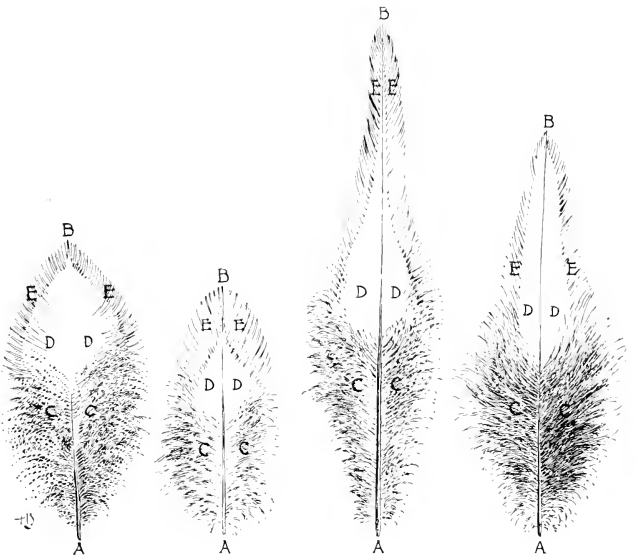

Figure 11.

DIVISIONS OF A FEATHER

A. Quill or shaft at the root of feather. (See technical terms.)
B. Tip or point. (Extreme outer end.)
C, C. Fluff and undercolor. (See technical terms.)
D, D. Web and surface color. (See technical terms.)
E, E. Fringe (or border).

The fringe is that portion of a feather at the extremities of the web and tip where the fibers are not joined by barbules. In self or solid colors, this border or edge is more glossy than the web. In parti-colors the color changes usually at the junction of the central web and the border as in hackle of a Columbian Plymouth Rock.

Hackle.—The neck plumage of males, formed of the hackle feathers. (See figures 1 and 9.)

Hackle Feathers.—The long, narrow feathers growing on the necks of the males. (See figures 1 and 9.)

Hangers.—A term sometimes applied to the smaller sickles and tail-coverts of males. (See figure 1.)

Head.—The part of a fowl composed of skull and face, to which the comb, beak, wattles and ear-lobes are attached. (See figure 1.)

Hen-Feathered.—A male bird that resembles a hen, owing to the absence of sickles, pointed hackle feathers, etc., is said to be "hen-feathered."

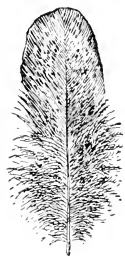

Figure 12. Mealy (Defective) Feather

Hock.—(See "knee-joint"; also, figure 1.)

Horn-Color.—Dark, bluish gray under an enameled surface.

Inbreeding.—The breeding of very closely related individuals, as sire and offspring, dam and offspring, or brother and sister. The closest form of line breeding

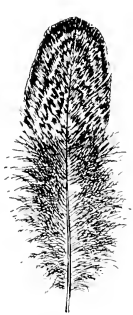

Figure 13. Mossy (Defective) Feather.

Iridescent.—Exhibiting colors like those of a rainbow; a prismatic play of color.

Keel.—The medium ridge on the breastbone of fowls.

Knee-Joint.—In fowls, the joint between the thigh and shank is called the knee-joint. (See figures 1 and 2.)

Knock-Kneed.—A deformity in which the legs come too near together at the knee-joints, and are bent outward, laterally, below the knees. (See plates 15 and 16, figures 1 and 1, pages 131 and 132.)

Leg.—Includes thigh and shank. (See figures 1 and 2.)

Line-Breeding.—Breeding from a male and female of the same strain or line of descent.

Lopped-Comb.—A comb falling over to one side. To disqualify for a lopped single comb (See "General Disqualifications), some portion must fall below the horizontal plane where the comb begins to lop. (See plate 7, figure 1, page 117.)

Luster.—The special brightness of plumage that gives brilliancy to the surface color of the fowl or section.

Mahogany.—A brownish-red. (See Bay.)

Mealy.—Having the appearance of being sprinkled with meal. Applied to buff or red varieties where the ground color is stippled with a lighter color. (See "Stipple," also figure 12.)

Mossy.—Irregular, dark penciling appearing in feathers and destroying the desirable contrast of color. (See figure 13.)

Mottled.—Marked on the surface with spots of different colors or shades of color.

Nostrils.—Opening beginning at base of beak and extending into the head.

Obtuse Angle.—An angle greater than a right angle, i. e., one containing more than ninety degrees. (See figure 25.)

Parti-Colored.—A term applied to feathers or fowls having two or more colors.

Pen.—(Exhibition): A male and four females of the same variety.

Penciling.—Small markings or stripes on a feather. They may run straight across, as in the Penciled Hamburgs, in which case they frequently are called "bars," or may follow the outline of the feather, taking a crescentic form, as in Silver Penciled and Partridge Plymouth Rocks. (See figure 14.)

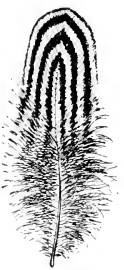

Figure 14.

Penciling Crescentic Form (Ideal)

Peppered—Peppering.—Sprinkled with gray or black. (See "Mealy.")

Pinion Feathers.—The feathers attached to the joint of the wing that is most remote from the body.

Plumage.—The feathers of a fowl.

Poultry.—Domesticated fowls reared for exhibition, or for their eggs, flesh, or feathers. Poultry includes chickens, turkeys, geese and ducks.

Primaries.—(See "Flights.")

Profile.—A direct side views of a fowl. Applied to live specimens and to illustrations.

Pullet.—A female fowl less than a year old.

Pure-Bred.—Technically, a fowl whose breeding is "pure" with respect to certain characters. In general use, the term often is inaccurately used when "Standard-bred" is meant.

Purple.—A color produced by a combination of red and blue; includes all shades produced by this combination, such as lilac, violet, etc.

Quill.—The hollow, horny, basal part or stem of a feather. (See "Shaft"; also, figure 7.)

Red.—The spectral color opposite to blue. Red covers a wide range of hues and shades.

Rump.—The rear part of the back of a fowl.

Saddle.—The rear part of the back of a male bird, extending to the tail and covered by the saddle feathers. (See figure 1.)

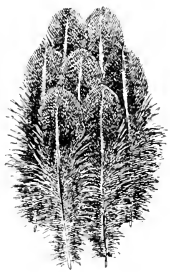

Figure 15.

One Form of Shafting (A Defect).

Saddle Hackle.—The long, narrow, pointed feathers growing from a male bird's saddle and drooping at the sides. (See figure 1.)

Scaly Leg.—One with incrustations or deposits upon and beneath the scales.

Secondaries.—The long quill feathers that grow on the second joint or fore-arm of a fowl's wing, visible when the wing is folded. With the primaries, they constitute the main feathers of the wing. (See figures 1 and 2.)

Section.—A distinct part or portion of a fowl's body; especially one of the parts or portions considered in judging fowls.

Self-Color — Solid-Color. — A uniform color unmixed with any other.

Serrated.—Notched along the edge like a saw.

Serration. A V-shaped notch between the points of a single comb.

Shaft.—The stem of a feather, especially the part filled with pith, which bares the barbs. (See figure 7.) Properly the part to which the vane is attached, but sometimes applied to the entire stem, including quill.

Shafting.—The shaft of the plume portion of a feather, being lighter or darker in color than the web of the feather. (See figures 7 and 15.)

Shank.—The lower scaly portion of a fowl's leg, exclusive of the feet and toes. (See figures 1 and 2.)

Figure 16.

One Form of Side Sprigs (A Disqualification).

Figure 17.
Slipped Wing and Twisted Feather (Defects).

Sickles.—The long, curved feathers of the male bird's tail, properly applied to the top pair only, but sometimes used in referring to the prominent tail-coverts, which are also called smaller sickles. (See figure 1.)

Side Sprig.—A well-defined, pointed growth on the side of a single comb. (See figure 16; also, plate 7, figure 5, page 117.)

Single Comb.—A comb consisting of a single, thin, fleshy, serrated formation, rising from the beak and extending backward over the crown of the head and in males, beyond the head. (See figure 5.)

Slate.—Gray, of medium or dark shades.

Slipped Wing.—A wing of a fowl not closely folded and held up in proper position; a defect resulting from injury or from weakness of muscles of wing. (See figure 17.)

Smaller Sickles.—See "Sickles."

Splashed Feather.—A feather with colors scattered and irregularly intermixed. (See figure 18.)

Figure 18.
Splashed (Defective) Feather.

Split Comb.—A single comb which is divided perpendicularly and the two parts overlap. (See figure 19.)

Spur.—A horn-like protuberance growing from the inner side of the shank of a fowl. It may be knob-like or pointed, according to the age and the sex of the fowl. (See figure 1.)

Figure 19.
Split Comb. Showing the Tendency of the Blade to Divide Perpendicularly (Disqualification).

Squirrel Tail.—A fowl's tail, any portion of which projects forward, beyond a perpendicular line drawn through the juncture of tail and back. (See figure 20.)

Standard-Bred.—Fowls bred to conform to the requirements of the American Standard of Perfection.

Stern.—The lower or under part of the posterior section of a fowl.

Stipple.—Verb, to execute on stipple, i. e.,

to draw, paint or engrave by means of dots instead of lines. Noun, the effect obtained in color work by the use of dots instead of strokes or lines. (See figure 21.)

Strain.—A family of any variety of fowls bred in line by descent by one breeder, or successor, during a number of years, that has acquired individual characteristics which distinguish it more or less from specimens of other strains of the same variety.

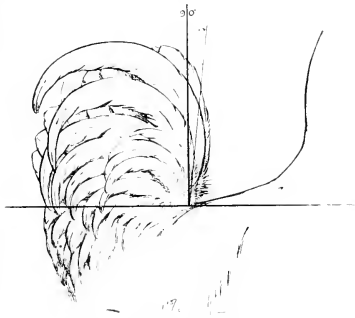

Figure 20. Squirrel Tail. (A Disqualification in Plymouth Rocks).

Stripe.—A line or band of color, regular or irregular in form, that differs from the body color of feather. (See figures 9 and 10.)

Striped Feather.—A feather, the surface of which contains a line or lines of color, regular or irregular in form, differing from the body color. When more than one stripe is present the feather is said to be laced, or barred, or penciled.

Stub.—A short feather or portion of a feather, when found between or under scales of shanks or toes.

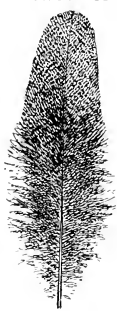

Figure 21. Stippled Feather (Ideal).

Surface Color.—The color of that portion of the plumage of a fowl that is visible when the feathers are in their natural position.

Symmetry.—Perfection of proportion; the harmony of all parts or sections of a fowl, viewed as a whole, with regard to the Standard type of breed it represents.

Tail-Coverts.—The curved feathers in front of and at the sides of the tail. (See figure 1.)

Tail Feathers.—Main; the straight and stiff feathers of the tail that are contained inside the sickles and tail-coverts; the top pair are sometimes slightly curved, but generally are straight. (See figures 1 and 2.)

Thigh.—That part of the leg above the shank. (See figures 1 and 2.)

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Thumb-Mark.—A disfiguring depression which sometimes appears in the sides of a single comb. (See plate 7, figure 3, page 117.)

Ticking.—Small specks of color on feathers, that differ from the ground or body color.

Tipped.—A term applied to a feather, the web end of which differs in color from the color of the body or main portion of the feather.

Trio.—One male and two females of the same variety.

Twisted Comb.—An irregularly shaped comb falling or curving from side to side, being distorted from the normal perpendicular position. (See plate 7, figure 2, page 117.)

Twisted Feather.—Feather with quill or shaft twisted. (See figure 17.)

Typical.—Expressing a characteristic in color or form, representative of a breed or variety; for example, typical shape, meaning the form peculiar to a breed.

Undercolor.—The color of the downy portion of the plumage, not visible when the plumage of the fowl is in natural position. (See figures 7 and 11.)

Variety.—A sub-division of a breed (See definition of "breed") used to distinguish fowls having the Standard shape of the breed to which they belong, but differing in color of plumage, shape of comb, etc., from other groups of the same breed. The general difference between the terms "breed" and "variety" is well brought out in the statement popular among breeders and fanciers: "Shape makes the breed; color, the variety."

Wattles.—The pendant growth at the sides and base of beak.

Web.—Web of Feather: The flat portion of a feather, made up of a series of barbs on either side of the shaft. (See figure 7.) Web of Feet: The flat skin between the toes. Web of Wings: The triangular skin between the shoulder and forearm of wing.

White.—A composition of all colors; the opposite of black. Enamel White: White with glossy surface. Silvery White: A metallic, lustrous white, without trace of yellow.

Wing-Bar.—The stripe or bar of color extending across the middle of the wing, formed by the color or markings of the wing-coverts. (See figure 1.)

Wing-Bay.—The triangular section of the wing, below the wing-bar, formed by the exposed portion of the secondaries when the wing is folded. (See figures 1 and 2.)

Wing-Bow.—The upper or shoulder part of the wing. (See figures 1 and 2.)

Wing-Coverts.—The small, close feathers clothing the bend of the wing and covering the roots of the secondary feathers. (See figures 1 and 2.)

Figure 22.
Showing Wry-Tail.
(A Disqualification).

Wing-Front.—The front edge of the wing at the shoulder. This section of the wing is sometimes called "wing-butt." The term wing-front is recommended, thus avoiding confusion. (See figures 1 and 2.)

Wing-Point.—The ends of the primaries, sometimes erroneously called "wing-butts." (See figures 1 and 2.)

Wry Tail.—Tail of a fowl turned to one side, permanently so. (See figure 22.)

Yellow.—The spectral color between green and orange, similar to gold; as applied to fowls' legs, beaks, etc., a rich, lemon-yellow is meant.

Figure 23.

Rear View.
After Removing Feathers.

Side View.
Before Removing Feathers.

Rear View after Main-Tail Feathers and Large Sickles Have Been Removed, Leaving Smaller Sickles and Tail-Coverts. (An Example of Faking for the Purpose of Improving Shape or to Destroy Evidences of Defective Color.)

SECTION II.

CHAPTER I.

INSTRUCTIONS FOR JUDGING PLYMOUTH ROCKS

MERIT.—The merit of specimens shall be determined by a careful examination of all sections in the "Scale of Points," beginning with symmetry and continuing through the list, deducting from the full value of each section of a perfect specimen, for such defects as are found in the specimen. Judges must familiarize themselves with the scale of points of each breed they are to pass upon to intelligently award prizes. And it must be understood that no more and no less value can be placed on any section than is provided for in the "Scale of Points." And it shall be further understood that this system must be applied whether judged by score-card or comparison. The minimum cut for any section shall be one-fourth of one point.

Weight.—All specimens shall be judged according to their Standard weights, provided, however, that the disqualifying weight for chicks shall not apply until December first of each year. Deduct two points per pound for amount lacking from Standard weights, and in that proportion for any fractional part of a pound, using one-fourth pound as a minimum, the specimen to have the benefit of any fraction less than one-fourth pound.

When adult specimens are equal in score and are above or below Standard weight, the one nearest weight shall be awarded the prize, except when one specimen is cut for weight, and the others are not, in which case the specimen that is Standard weight or above shall be awarded the prize. In the case of chicks of immature specimens having an equal score, when cut for lack of weight, the one of less weight shall be awarded the prize; but when each of such specimens is of Standard weight, or over, the one nearest weight shall be awarded the prize.

(CAUTION.—The weight clause must not be understood to mean that a small but over-fat specimen is within the spirit

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This chapter is taken from the Standard of Perfection, and is quoted verbatim, except for changes made necessary by the omission of such instructions as in no way apply to the judging of Plymouth Rocks.

of the meaning of the Standard; the size must be proportionate to the weight, preserving the ideal shape and type of the Standard specimen.)

Reweighing.—The judge may, at his option, demand the reweighing of the specimens in competition, in all cases where Standard weights apply.

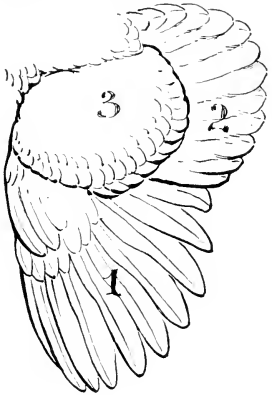

Figure 24.

Showing Divisions of Wing. 1 Flights or Primaries, 2 Secondaries, 3 Fronts, wing-bows and wing-bar

Wing Division. — In discounting the color of wings, the section shall be divided into three separate parts, allowing two points for fronts, wing-bow and bar; two for primaries and primary-coverts; two for secondaries and no greater value can be placed on any one of these parts. (See figure 24.)

Scores Entitling Specimens to Prizes.—To receive a first prize the specimen must score ninety points or more, except cocks of all parti-colored varieties, which may be awarded first prize, provided they score eighty-eight points or more. For each receding prize drop one point. A pen to win first prize must score one hundred and eighty points or more, unless it contains a cock of a parti-colored variety, in which case one hundred and seventy-eight points or more may win first prize; but first prize shall not be given on a pen if the male in the pen scores less than eighty-eight points. No prize shall be awarded an exhibition pen if any specimen in the pen scores less than eighty-five points.

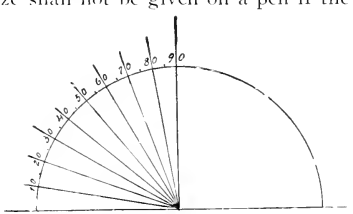

Figure 25.
Diagram Showing Degrees from Horizontal.

Sweepstake Prizes. — In competition for sweepstake prizes, when solid-colored specimens com-

pete with parti-colored specimens, white specimens shall be handicapped two points each, black specimens one and one-half points each, buff specimens one point each; after such reduction, the specimen having the highest score, or the specimens having the highest average or combined score shall be awarded the prize.

Old and Young Specimens.—All other points being equal, where prizes are offered on old and young specimens competing together, the former shall be awarded the prizes.

Faking.—Faking of any description shall debar from competition specimens so treated. (See Glossary for what is meant by "Faking.")

Creaminess or Brassiness.—In White Plymouth Rocks the presence of brassiness on surface, or creaminess of quills or undercolor is a serious defect and is to be discounted accordingly.

Bleaching by means of chemicals is such a harmful practice that where it is proved by other evidence than the condition of the specimen, or specimens, such bleached specimen shall be considered faked and disqualified.

Score of Exhibition Pen.—To ascertain the score of an exhibition pen, add the scores of the females together and divide the sum by the number of females in the pen; to the quotient thus obtained, add the score of the male and this sum shall be the score of the exhibition pen.

Dated Score Cards.—All score cards made out by judges applying the Standard are to be dated with ink, indelible pencil or stamp on the date the specimens are judged.

Defective Score Card.—It shall be considered irregular for a judge to sign a score card unless the weight is considered, regardless of the season.

Private Scoring.—Private scoring of specimens is not advisable, and members of this Association are directed not to lend their support to the practice as a selling method. Judges are ordered to weigh each specimen and apply the proper cut and to make proper cuts for the condition of the specimen at the time the fowl is scored.

Ties.—In case of ties between two or more specimens that cannot be broken by any of the previous rules, the specimen receiving the smallest total sum of cuts for shape shall be awarded the prize. In case of ties on exhibition pens, when the tying pens contain either all old or young specimens, the adult

pen shall win; when the tying pens are both adult or both young, the pen containing the highest scoring male shall win; when one of the tying pens contains females of mixed ages, the pen containing the highest scoring male shall win; when one of the pens contains all hens or all pullets, while the other contains females of mixed ages, the pen having all the females either adult or young shall win; when the tie cannot be broken by any of the above rules, the pen containing the lowest total of shape cuts in the five main shape sections shall win.

IN APPLYING THE COMPARISON SYSTEM

Typical Shape.—In awarding prizes by comparison, judges must consider carefully each and every section of the specimen, according to the Scale of Points and not allow color alone, or any one or two sections to influence their decisions. The vital importance of typical shape is to be borne constantly in mind, at the same time giving due consideration to color in all sections, including undercolor.

Handling.—All specimens in competition must be handled and examined by the judge, except those that show decided inferiority as seen in coops.

Disqualifying Weights.—Specimens falling below disqualifying weights after December first of each year must be debarred from competition.

Standard Size.—In determining size, the judge shall decide by comparing the specimens in competition with due regard to weight in all breeds and varieties. When a bird fails to attain, or in case it exceeds, the size proportionate with the type or shape, it must be discounted quite severely.

Color Defects.—A few, very small, grayish specks in white fowls shall not debar a specimen that is otherwise superior in color from winning over one less typical in shape and sound in color; provided, however, that the gray specks do not appear prominently in the primary, secondary or main tail feathers.

Scaly Legs.—A fowl whose legs and toes are so deformed by what is called "Scaly Legs" as to hide or to appear to have destroyed the color, shall not be awarded a first prize.

Note.—Under the comparison system, judges must deduct the full valuation of the cuts in all sections where a specified cut is made under the heading of "Cutting for Defects."

CHAPTER II.

GENERAL DISQUALIFICATIONS FOR PLYMOUTH ROCKS

If, in applying the Standard of Perfection, judges find any of the defects described below, they shall disqualify the specimen and state on the proper card or blank the nature of the disqualification:

Specimens unworthy of a score or lacking in breed characteristics.

Any feather or feathers, stubs or down on shanks, feet or toes; or unmistakable indications of feathers, stubs or down having been plucked from same.

Plucked hocks.
Web feet.
More or less than four toes on either foot.
Legs or toes of color foreign to the breed.
A wing showing clipped flights or secondaries or both.
Deformed beaks. (See figure 5, plate 7, page 117.)
Decidedly wry tails.
Crooked backs.
Lopped combs.
(A comb which merely turns over a trifle from the natural, upright position is not to disqualify.)
Combs foreign to the breed. Split combs. (See figure 19.)
Side sprig or sprigs. (See figure 16.)
Entire absence of main tail feathers.
Decidedly squirrel tail. (See figure 20.)

Positive enamel white in ear-lobes or unmistakable evidence of an attempt to remove such defect.

Any appearance of crest or beard.

A specimen falling more than two pounds below Standard weight.

Faking in any manner shall disqualify the specimen.

Under all disqualifying clauses, the specimen shall have the benefit of the doubt.

Note.—Red pigment on sides or back of shanks is not to be considered a defect.

CHAPTER III.

CUTTING FOR DEFECTS

These cuts should not be confused with nor take precedence over the valuation given each section in the Scale of Points of all varieties.

Judges, in applying the score card, are to discount for the more common defects, as follows:

Frosted combs	½*
Too many or too few point on single combs, each	½
Thumb mark on comb, not less than	1
Rear of comb turning round	½ to 1
Coarse texture of comb	½ to 1
Gray or white in any except disqualifying sections of plumage of Partridge Plymouth Rocks	½†
Coarse texture of wattles	½ to 1
For missing feather or part of feather in primaries or secondaries, where foreign color disqualifies	1 to 3
Where feather is broken, but not detached, in primaries or secondaries, where foreign color disqualifies	½
For broken or missing feather or feathers in primaries or secondaries of buff or parti-colored varieties, where foreign color does not disqualify	½ to 1
Absence of sickles, where foreign color disqualifies, for each sickle	1 to 1½
Absence of sickles, where foreign color does not disqualify, for each sickle	1
Absence of one or more main tail feathers in varieties subject to color disqualifications, each	1
Absence of one or more main tail feathers, when not a disqualification, each	½
For twisted feather or feathers, in wing or tail of any variety	1 to 2
Brassiness in all varieties, in each section where found	1 to 2
Creaminess of plumage or quill in White Plymouth Rocks, in each section where found	¼ to 1½
Purple barring in plumage of any variety, in each section where found	½ to 2

Irregular barring in Barred Plymouth Rocks, in each section where found ..... ½ to 1½

Light colored shafting in Buff Plymouth Rocks, in each section where found ..... ½ to 1½

Gray specks in any part of plumage of White Plymouth Rocks, in each section where found ..... ½ to 2

Mealiness in plumage of Buff Plymouth Rocks, in each section where found ..... 1 to 1½

Irregular or deficient penciling in Silver Penciled and Partridge Plymouth Rocks, in each section where found ..... ½ to 1½

Black or white in Buff Plymouth Rocks, in each section where found, cut from one-half point to the color limit of sections.

Slate undercolor in Buff Plymouth Rocks, in each section where found ..... ½ to 1½

Color of eyes not as described for the different varieties ..... ½ to 1½

If eye is destroyed, leaving only the socket 1½

If eye shows permanent injury, but retains its form ½ to 1

If tail in any specimen shows not to exceed three-fourths development 1

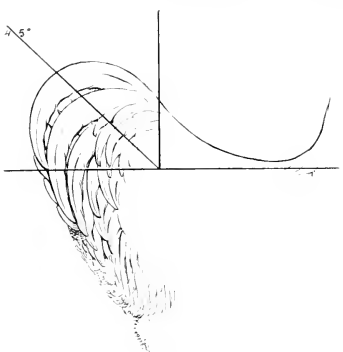

Figure 26.
Tail Carried at an Angle of 45 Degrees.

If tail in any specimen shows not to exceed one-half development 2

If tail in any specimen shows not to exceed one-fourth development 3

Crooked breast bone ½ to 2

Crooked toes, each ..... ½ to 1

In Barred Plymouth Rocks, for black feathers or feathers, in each section where found ..... ½ to 1½

*To shape limit. †To color limit.

(Names of Association, here)

(Date; month, days and year show is held, here)

OFFICIAL SCORE CARD OF THE AMERICAN POULTRY ASSOCIATION

Exhibitor .....

Variety ..... *Sex* .....

Entry No. ..... *Band No.* ..... *Weight* .....

	Shape	Color
Symmetry		
Weight or Size		
Condition		
Comb		
Head		
Beak		
Eyes		
Wattles and Ear-Lobes		
Neck		
Wings		
Back		
Tail		
Breast		
Body and Fluff		
Legs and Toes		
**Crest and Beard*		
†Shortness of Feather		

Total Cuts ..... *Score* .....

....., *Judge*

....., *Secretary*

*Applies to Crested Breeds. †Applies to Games and Game Bantams.

Score cards may be obtained from the Secretary of the American Poultry Association.

SECTION III.

CHAPTER I.

STANDARD MEASUREMENTS

THE term "Standard Measurements" refers to the relative size of the different parts of a fowl and not to any definite mathematical statement of length, width or circumference, as no such definite standards have ever been established. This may be done some time, but for the present the breeders' sole guide in determining the correct measurement of sections must be the eye, trained to observe correct proportions between the different body parts. These proportions are established by the American Standard of Perfection, and the inexperienced beginner and the expert judge alike must form their estimate of the degree to which a given section of any individual fowl corresponds to the ideal by a careful study of such sections in comparison with Standard ideal illustrations and Standard descriptions of that breed and sex.

The person who is accustomed to thinking of animal measurements as being determined by the use of tape, ruler or calipers may find it a little difficult to accustom himself to regarding the soft, pliable surface of a fowl's plumage as forming the final outline of practically all its parts. For the purpose of judging, however, such outlines are as distinct and final as solid flesh, assuming, of course, that the plumage is in its natural orderly arrangement.

It should be clearly understood that the use of the terms "broad," "long," "moderately long," "short," etc., does not in any case involve comparison with other breeds of fowls. In all instances, they refer to comparisons between the different sections of the bird under consideration, and with the Standard illustration of the ideal bird of the same breed and sex.

For example, the head of the Standard Plymouth Rock male is described as "moderately large." This does not mean that it is "moderately large" as compared with the head of a Leghorn, on the one hand, or a Brahma on the other, but it means "mod-

erately large" when compared with other sections of the same bird. The Standard could have specified a small, delicate, finely cut head for the Plymouth Rock male, or one that would be distinctly large. What it actually has done, however, is call for a head of "moderate size"—moderate when compared with other parts or sections of the bird. The Standard goes farther and exactly illustrates the correct proportion in the cuts on page 110 and following pages, so that the breeder may have at hand an exact "pattern" for comparison.

The head of any individual Plymouth Rock male, therefore, approximates correct size just in proportion as it conforms to the development indicated. And the same principle applies to all other parts or sections of Standard-bred fowls.

Twelve full page illustrations show ideal profiles of males and females of all the different varieties of Plymouth Rocks and elsewhere in the book will be found illustrations showing the proportions of such other parts as cannot be exactly shown in the profiles. The beginner who makes a careful study of these illustrations will at no time have to go outside of this book to determine what is meant by any term relating to proportion. (H. T. J.)

CHAPTER II.

COLOR TERMS

Poultrymen generally have found it quite difficult to agree upon exact shades of color for different breeds and varieties of fowls and more or less confusion has always existed on this point. One reason for this is the great variety of possible shades in all colors. The Standard Dictionary, for example, recognizes over one hundred and sixty kinds of "red" and over one hundred kinds of "black," with a similar range in other colors. The situation is further complicated by the fact that no exact definitions of color terms exist that enable one to determine with any certainty the precise shade of color specified in any given instance. Neither has it been found practicable to produce a color chart that can be used with any degree of certainty. It is undoubtedly true, in the case of all colors, that the true and exact shades can be learned only by observation.

In the Glossary, on pages 14 to 20, and in matter descriptive of the different varieties of Plymouth Rocks, colors have been defined as accurately as can be done in a few words, and it is hoped that the reader will, from these descriptions, be able to form a fairly accurate idea of the colors called for in these varieties. In addition to these brief definitions, however, the following explanations of color terms applied to Plymouth Rocks doubtless will prove helpful to many.

Reddish-Bay.—This color is called for in the eyes of all Plymouth Rocks and, as a rule, is a distinct red, but with a brownish tinge. Bay in fowls' eyes varies from light to dark, but the ideal is medium in shade.

Black.—Two distinct blacks are called for in Plymouth Rocks. In Barred Rocks, the barring "stops short of positive black." This black should be without greenish sheen.

In all other varieties of Plymouth Rocks, black means either a greenish-black, that is, a solid black with a greenish sheen, or a dull, intense black.

Green.—Green does not exist as a positive color in the feathers of fowls, but is produced by the structure of the feather, the parts of which set somewhat like prisms, thus producing an iridescent effect which in black feathers of a certain character gives a brilliant green sheen. Under some conditions this sheen gives a purplish effect, which is highly objectionable in Plymouth Rocks.

Brown.—Brown and mahogany should be considered together to get a clear understanding of these closely related colors. Brown is composed of red, yellow and black, giving a color darker and more somber than bay and, in fowls, shows little red. Mahogany also is formed of red, yellow and black, but describes a color verging on chestnut, though lighter in tone, i. e., containing a little more red and yellow. Mahogany closely approximates the color of chestnuts when first taken from the burr and is lighter and redder than the color of chestnuts as ordinarily sold in market.

Bluish.—There is no blue in the feathers of fowls. The color called blue is a mixture of black and white, the bluish tinge being a faint iridescence. In Barred Plymouth Rocks the ideal bluish tinge is produced mainly by the various modified shades of black, grayish-black and grayish-white resulting from the modified white and black of the barred feathers and from their overlapping.

Buff.—A yellow-toned brown, that is, a yellow darkened with red and black. Different shades of buff are found, ranging from lemon buff to a distinct reddish-yellow. Bearing in mind that yellow is the color of gold, the "rich, golden buff" called for by the Standard must be understood to be a golden yellow.

Gray.—This color, as applied to Plymouth Rocks, is used chiefly in connection with the appearance of objectionable dark markings in feathers that should be clear white or other color. Gray is a black reduced with white until it is of a dull, neutral shade. Black as a disqualification or defect must be "positive" black, that is, unmodified by white.

Purple.—As applied to the black feathers of fowls usually appears in the form of barring, and is commonly supposed to be indicative of "too much luster." Both purple and green apparently are produced by the reflection of light from prismatic black feathers. The exact reason why some feathers show green shades and some purple is not clearly understood. It is probable that the purple is due to a reddish element, which tends to crop out as a result of poor breeding.

Red.—This is supposed to be the original color of fowls, and in crosses or in careless breeding is liable to appear at any time. Fowls of all colors, apparently, carry red as a latent color factor. Red in Barred, White or Columbian Plymouth Rocks is a disqualifying defect.

White.—Pure white is a dead white, without any other shade, though, as a matter of fact, what passes for a pure white has a bluish tinge, as a rule. It is common knowledge that the "whitest" white fowls are very apt to have some feathers with a light flecking of gray where the black pigment, which gives the bluish tint, has become too conspicuous.

Silvery white is pure white with a sheen, as often seen in the hackle and saddle feathers of male Silver Penciled Rocks.

Yellow.—This is the color of beaks, shanks and feet in most varieties of Plymouth Rocks, which are clear, rich yellow, closely approaching lemon-yellow. Yellow also is an important color in the plumage of fowls, though it never appears there as a pure color—being modified in all cases by reds and blacks, thus producing buff, bay and brown shades of varying degrees of intensity. (H. T. J.)

SCALE OF POINTS
FOR JUDGING PLYMOUTH ROCKS

All Standard Sizes.

BARRED PLYMOUTH ROCKS
WHITE PLYMOUTH ROCKS
BUFF PLYMOUTH ROCKS
SILVER-PENCILED PLYMOUTH ROCKS
PARTRIDGE PLYMOUTH ROCKS
COLUMBIAN PLYMOUTH ROCKS

Symmetry	4
Weight	4
Condition	4
Comb	8
Head — Shape 2, Color 2	4
Beak — Shape 2, Color 2	4
Eyes — Shape 2, Color 2	4
Wattles and Ear-lobes — Shape 2, Color 2	4
Neck — Shape 4, Color 6	10
Wings — Shape 4, Color 6	10
Back — Shape 5, Color 5	10
Tail — Shape 5, Color 5	10
Breast — Shape 5, Color 5	10
Body and Fluff — Shape 5, Color 3	8
Legs and Toes — Shape 3, Color 3	6
	100

PART II.

Successive Stages of Development in Domestic Fowls

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Breeding of Domestic Fowls

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SECTION I.

CHAPTER I.

ORIGIN AND DEVELOPMENT OF DOMESTIC FOWLS

THE ORIGIN OF FOWLS is a subject in which the ornithologist is much more deeply interested than the practical poultryman, the breeder, or even the ardent fancier; and, it is a topic that he alone is competent to discuss. The accounts that we find in the best poultry works vary considerably. Hence, we say that it is a subject upon which the student of ornithology, alone, is qualified to pass judgment.

The origin of domestic fowls is generally attributed to the Gallus bankiva, of ferrugineus, commonly called the Jungle Fowl of India, which some claim are still to be seen there. Specimens claimed to be such were exhibited at the Madison Square Garden Show, New York, not more than ten or possibly fifteen years ago. These specimens bore a close resemblance to the illustrations of the Jungle Fowl which we find in poultry books published about the middle of the nineteenth century. On the other hand, it does not require a great stretch of the imagination to see them as the result of a cross between a Black-Red Game Bantam and a Brown Leghorn. In fact, they looked like a somewhat overgrown specimen of the former, while the plumage resembled that of the latter when unscientifically bred.

Variation in Early Types.—Some authorities maintain that birds varying in type as widely as do different breeds of our domestic fowls, as for instance the Game Bantam and the Brahma, or the Cochin and the Game, could not have been produced from one species, and that our present day domestic fowls must trace their origin back to at least two sources.

Edward Brown, in "Races of Domestic Poultry," points out the fact that naturalists as a rule for a time accepted the Darwin theory, that all races of our domestic fowls were descendants of the Gallus ferrugineus, the Jungle Fowl of India, while poultrymen as a rule refute this and accepted the theory first advanced by Lewis Wright, that it was improbable that several of our

breeds, particularly those we obtained from China, were descendants of the Gallus ferrugineus. If so, we must go farther back to find the common ancestry.

W. G. Tegetmeir, who, according to Brown, was associated with the great Darwin in his research work, took the view that while a large part of our present day domestic fowls could trace their ancestry back to the Gallus bankiva, it was more than improbable that fowls of certain types, such as the Brahma and Cochin, could also. These, in his opinion, which he cites apparently after years of research and study, must have descended from a different branch of the genus, either now extinct or modified to such an extent that it is classed with some other species of the Gallus family. This, of course, means that we must go back of the Gallus bankiva to find the common ancestry.

Brown, in the excellent work mentioned heretofore, gives the sum and substance of our knowledge at the present time in the following paragraph:

"To sum up, therefore, it may be taken that with the domestic fowl, as with many other natural forms of life, we can go so far back, but no further. The probability is that, as in the case of dogs, all the varieties of fowls do not owe their origin to any one species, at any rate of those now extant, and that we must look to another progenitor than the G. ferrugineus (bankiva) for several of the later introduced races, more especially those from China."

Incentives to Poultry Keeping.—While we have fanciers and breeders of Standard fowls among us by the thousands that are engaged in this work purely for the pleasure that they derive from it, the income therefrom or, more directly, the food supply derived is the great incentive to poultry keeping with a very large majority. Nevertheless, all of the available accounts of ancient literature indicate, and the probabilities are that the love of sport first induced the natives of India, in which country fowls were first found, to domesticate wild fowls; and to obtain specimens better endowed physically for cock fighting, a sport that has been the natives' leading amusement until the present time, they bred fowls after their own selection.

Introduced Into Europe.—Starting in India, the keeping of fowls with civilization crept westward through Asia and Europe into Italy, Spain, France, Belgium and England. Besides their indebtedness to the fowls that developed from this early intro-

duction, the European countries, England especially, owe much to the importations during modern times. Many of the fowls that were obtained from China early in the nineteenth century were of widely different types from those that migrated through Western Asia and Eastern Europe some centuries before.

First Authentic Accounts.—Exact information upon poultry topics is exceedingly meager until within the last one hundred years or so. Almost nothing of the methods employed in keeping flocks or of the description of the breeds is found up to the early part of the nineteenth century, and it is about the middle of this century before anything satisfactory is found upon either topic. We are obliged, therefore, to draw most of our conclusions concerning the evolution and transition in both, partly from the evidence supplied by the accumulative results of which we are the eye witnesses, partly from such literature of the transitory periods as is available, and somewhat from the information given by our veteran associates.

Types—Geographical.—The English and French have been particularly zealous in developing splendid breeds of fowls which have a leaning toward a fine meat carcass rather than to heavy egg production. The Spaniards, Italians, and Hollanders have paid more attention to egg-producing qualities. The Asiatic races produced the largest and most magnificent of all fowls, which were also the most pronounced meat types.

Early American Importations.—Comparatively early in the life of the nation, Americans adopted many foreign breeds. About the middle of the nineteenth century, especially a little later, the large Asiatic breeds found much favor with poultry keepers in this country. Their influence upon breeds that originated here is incalculable. The late Mark Pitman, a former resident of Salem, Massachusetts, once related to the writer some interesting facts about these importations. From this account it appeared that many of them were not undertaken for the purpose of acquiring new blood or new breeds for the American poultrymen, but for no higher motives than to provide fresh meat from time to time for the shipmaster's table. Those fowls that reached America alive owed their survival to their lean condition as, unfortunately, the best were usually the first choice, and the poorest, because confined on shipboard, became eventually so poor that they were unfit for the table and survived the entire journey to become the progenitors of new races or strains. This information enables us to understand why so few of the impor-

tations became established and why so many failed to perpetuate themselves.

English Types in America.—English importations have been frequent all along since the middle of the nineteenth century. The English developed a few breeds that were exceedingly popular during the early days of modern American poultry keeping. With the advent of purely American breeds, however, the popularity of these breeds rapidly declined. The English breeds of today most commonly kept here are of later origin and partake more of the nature of the American breeds.

American Types.—That the people of some nations seemed intent upon producing breeds that excelled in egg production, while others were equally zealous in their endeavors to produce breeds that surpassed in the quality of their flesh, has already been pointed out. Americans, however, were never content in attempting to excel in but a single quality. It is a noteworthy fact that all our American breeds are the result of attempts on the part of one or more breeders to make a cross, or a series of crosses, that would establish a new breed which excelled all those that had preceded it for egg production, for quality of flesh, and for quantity of flesh compared to offal.

A study of the history of the recognized American breeds will confirm these statements. Their names alone will establish the fact that American endeavor has been extended wholly along dual-purpose lines.

SECTION II.

CHAPTER I.

BREEDING DOMESTIC FOWLS

THE advancement, as heretofore related, has been an accomplishment of the "breeder's art," which consists of many methods and systems of selection and mating.

Mating—By Natural Selection.—Prompted by natural instincts to reproduce and perpetuate the species, fowls, in the wild state, themselves choose mates of the opposite sex as they will in domestication, if allowed to do so. What attributes or caprice influences this selection is as yet undiscovered by the closest students of the life and habits of either domesticated or wild fowls. Yet, it does seem that the more magnificent and lordly males are always surrounded by a flock of admiring and obedient females. If this is the true situation, it is then a wise natural provision, because it means that the strongest, most rugged and vital of the males become the consorts of the females to the exclusion of the weaker. The doctrine of survival of the fittest, then, has a wide reaching influence; inasmuch as each male consorts with several females comparatively few males are necessary, and only the most select as to physical fitness have an influence upon the progeny.

The inclination of the male to gather about him a half-dozen, a dozen, or a score of females is, from an economic standpoint, a lasting advantage; not so much because so few males have to be kept, but because it is necessary to permit only the males that are best from the breeder's standpoint, whether it be for size, egg-producing lineage or brilliant plumage, in the breeding yards.

Artificial Selection.—Promiscuous matings are no longer a feature of our well-conducted, modern poultry establishments, large or small. The intelligent poultryman must supply a product that measures up to a certain "standard." Whether that "standard" demands a certain number of eggs a year per hen, or eggs of a certain color, or size, or weight; a fowl that produces a given number of pounds of flesh in a given time, or one

that develops feathers that grow backwards, is immaterial. Only those males and females that excel in the characteristics demanded by this particular race or kind of fowl, because those, and only those that excel in the characteristics demanded, will reproduce them in the greatest measure.

Systems.—In order to reach their goal, whatever that may be, breeders of all kinds of poultry, for any and all purposes, long ago adopted methods that were sure to prevent their birds mating by natural selection and substituted selections of their own. This has led to different systems of matings. At first these were very simple, but the longer the fowls were studied the more exacting standards became; and the deeper breeding problems were probed the more complicated they seemed, so in time the system of mating became more or less complex, until now, in some cases, the system itself, though simple in theory, is such that the application becomes most complicated. There are instances, however, when the system of mating, though seemingly complicated, is very simple of application. In several well known instances, the system that is the simplest and clearest to understand becomes the most difficult to practice successfully, while the one that is more complicated, theoretically, is found to be more easily applied and more certain of results.

Single Matings.—In the beginning, whether mating for egg production, large size, or certain excellencies in plumage, real or imaginary, the breeder selected for his matings the specimens of both sexes that nearest approached his ideals. This constitutes what is now known as a single mating. That is, a single mating is one in which both sexes conform more or less closely to a certain ideal or standard; each sex of the progeny of such a mating is also expected to conform more or less closely to the requirements of such an ideal or standard. Under the American Standard of Perfection, a single mating consists of a male and females that conform to a certain degree of approximation, at least, to requirements for that breed and variety, as described and portrayed in the afore-named Standard. As two females alike in all respects have never been produced, a strict definition of an ideal single mating would be—a mating consisting of a male and females conforming to the requirements of the Standard of Perfection, and the ideal results from an ideal single mating would be sons like the sire and daughters like the dam.

In other words, both the parents and their progeny would be ideal specimens, judged according to the Standard of Perfection. Of course, ideal birds never existed and undoubtedly never will. Therefore, a practical definition has already been given.

This system of mating is almost universally practiced in the breeding of solid-colored varieties; and very much in the breeding of parti-colored varieties, but not universally so by any means.

Intermediate Matings.—Before the art of breeding had been practiced long under the several Standards that preceded the one that now governs our breeding operations, it was discovered that the same hen that produced the best males in the parti-colored varieties, did not produce as a rule the best females when judged by the accepted Standard. This discovery led to the practice, after observing results from different individuals, of using in many matings females of different types of plumage, some from which the best males and others from which the best females were expected. This became a common practice. Usually a small number, say one, two or three females from which the best exhibition males, and four, five, six or more from which the best exhibition females were expected, were placed in each mating. It is really a modification of both, the single mating and double mating systems, and, because it partakes of the nature of both, may be called an Intermediate System. It is in reality an application of double mating principles on one side of the mating, the female, and thereby an acknowledgement of the necessity of double mating. It may be said to have been the first step toward the practice of double mating and was in common use long before the adoption of the double mating system in its entirety. This modification of the single mating system is still practiced by those who breed parti-colored varieties, and who are opposed to the system to which allusion has been made, as apparently complicated but of easy application in actual practice.

Double Matings.—The double mating system is known only among breeders of standard-bred poultry because it is not practiced by breeders of other forms of animal life. It may be defined as a system which employs special and separate lines of fowls and breeding to produce exhibition males and females. That is, under this system, the exhibition male line is only used to produce exhibition males or with any expectation of doing so. The females of the male line, as well as the males, are expected to

produce exhibition males and no exhibition females. The same principles hold true for the exhibition female line; both male and females of the exhibition female line are expected to produce exhibition females. The males are in turn used to breed exhibition females, but the males are not expected to be exhibition birds, or to produce exhibition males. That is, as already explained, the province of the male line.

Though already stated, the fact should be emphasized that this system of mating is commonly practiced only by breeders of parti-colored fowls. The conclusion can be clearly drawn that separate matings to produce standard males and standard females are necessary on account of color requirements. Seldom are separate matings used, or even thought to be necessary, to produce the requirements for shape of either males or females. Such expediencies have been resorted to very infrequently and the practice has passed almost entirely out of use. It is generally considered that the standard shape of male and female coincides when due allowance has been made for natural difference in shape of male and female. In this regard the experiences and practices of poultry breeders do not differ in any particular from those of breeders of other animals. The breeders of forms of animal life in which little attention is paid to color, never think of, let alone use, a special or separate line of breeding for each sex.

From the facts as stated, it appears that we must find our excuse, if excuse it may be called or if an excuse is necessary, which is doubtful—better should we call it a necessity—for special or double matings to produce the males and females that nearest approach the standard descriptions among parti-colored fowls, in the color requirements alone.

The first question that comes to mind is, why not adopt a standard description for males and females of the parti-colored fowls that would coincide, making due allowances for the natural color differences of the two sexes, as we have in shape?

The answer to this question is found in others like it. Can it be done? When has it been accomplished? If a standard could be written in which the color description of both males and females of parti-colored fowls would be such that standard-colored males and standard-colored females, mated together, would produce standard-colored males and standard-colored females, would breeders and exhibitors be satisfied with the appearance of both sexes? It is conceded that the best males to

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produce exhibition females, of the parti-colored varieties, are the sons of the best exhibition females. Therefore, if we are to make a standard that will permit the highest attainments of color and markings in the females of parti-colored varieties, we must describe for their ideal mates, the sons of such females. Do the sons of such follow very closely the present standard description, and, if not, would an adequate description of the sons of females of high standard quality, as we find them, be acceptable to the breeders of many of the parti-colored varieties? It must be fully taken into consideration that an accurate description of such must be accepted as our standard ideal, if we are to have a Standard based upon the highest ideals of female plumage.

On the other hand, if we accept the present Standard for exhibition males and we propose to have a Standard that is such that both exhibition males and females can be bred from a standard (single) mating, the description of exhibition females in the (proposed) standard must coincide with the description of the females that our best exhibition males produce, as the females that produce our best exhibition males are always the daughters of our best exhibition males. Therefore, one method of making single mating feasible would be to adopt the present Standard on males and for the standard females describe such females as the best exhibition males produce. The adoption of such a standard, one based on the present exhibition males and the daughters of exhibition males, would mean that the exhibition females as at present described in the Standard would disappear from the show room and, in all probability, from the breeding yards as well.

This might be one way of making successful single matings possible; the other, as already pointed out, might be by accepting the description of the standard female and adopting in place of the present description of the standard male, a description of such males as the best standard female produces.

Theoretically, a single or standard mating under these conditions should produce standard specimens of both sexes. The vital question is not, however, will a standard or single mating produce standard chicks of both sexes, BUT—because it is the best specimens that we seek to produce for exhibition purposes—the question most positively becomes, will the best male mated to the best female produce both the best males and the best females? This is the vital question, for if the best male mated to the best female would produce only the best males—then, in

order to produce our best females, we need a slightly different female with this sire, or we need a little different male with the dam.

If the original pair produces the best females, but not the best males, the same fundamental change must be made in the mating to produce the best males. A different male with the dam, or another and different female must be mated with the sire.

But when two females that differ in either color or markings are used with the same male, one intended to produce the females nearest approaching our ideal, and another to produce the male nearest the ideal, so radical a departure from the principles of single mating is incorporated that an admission of the necessity of a special mating to produce the best ideals of either sex becomes most pronounced.

To pursue this line of thought a step further—how often would a mating consisting of the best male and the best female produce the best males and best females to comply with any fixed standard of color or markings in parti-colored fowls? How often would such a mating produce either the best males or females and how often would it produce neither? Much more often by far than not, it will produce neither the best males nor the best females, make the Standard read as you like.

On the other hand, under the present Standard by using special matings for each sex, it is known to be more than possible to produce the best males by breeding such to their own daughters or daughters of other high quality males. Results of this kind have been accomplished for years and are being accomplished continually. Like results are being accomplished in breeding the best exhibition females by mating such to their sons or the sons of other females of high exhibition quality.

If the Standard is fundamentally wrong because special matings for each sex are necessary to meet its requirements, the problem for solution is not how may we change the Standard to make these special matings unnecessary, but how may we make a Standard so that its requirements will not place a handicap on standard matings, and a premium upon special matings for each sex. The problem has been before us since the first Standard was made, and as yet no one has offered a solution that seemed theoretically plausible, let alone being practically possible. Special matings have been producing the best specimens all these years. From either standpoint, performance or

theory, the argument favors the product of special matings for each sex.

At the present writing, there is unquestionably a strong desire on the part of breeders and exhibitors generally to adopt standard (or single) matings, even if the Standard has to be modified or changed in order to permit the breeding of the best specimens of both sexes from one mating. The object is to simplify breeding problems for beginners, which, in the estimation of many, would do much to popularize a variety. But as yet no one has suggested a way to accomplish this that inspires the confidence of his contemporaries. Changes toward this end in standard requirements are accompanied by two serious considerations: first, will such changes, as it at first appears may tend to solve the difficulty, be acceptable when the result, namely, the specimens produced, come to view; and, secondly, would such changes or any changes, that have yet occurred to any one, place a premium upon the progeny of standard matings by producing better specimens thereby, than can be produced by other methods, specifically by what is known as double-matings, which really amounts to a special mating for each sex? No system of mating can long endure after breeders find another way of producing better specimens. The final test is the closest conformity to the Standard requirements. Who, then, can compile a standard that will so state its requirements that the specimens produced from standard (single) matings will excel those produced by any other system that man may devise? The system that does that very thing will be most generally practiced by those who breed exhibition birds from now till the end of time.

In-Breeding.—The in-breeding is the surest and quickest way, if not the only way, to perpetuate desired characteristics is a generally accepted theory. It becomes, then, the fundamental means of establishing certain qualities in a line or a strain. The longer the in-breeding of successive generations which possess certain distinctive features is continued, the more fixed these features become.

Limit of In-Breeding.—How long in-breeding may be continued is an open and unsettled question. Obviously, the number of generations that may be inbred depends upon several things, the first of which is the relationship of the original pair, whether these were unrelated, distantly or closely related. Secondly, it depends upon the stamina of the original stock, and further, or thirdly, upon how much stamina is maintained by selection, for

it is possible to select for strength and vigor as well as any other quality. In many cases stamina is the first and most important consideration for selection. Usually, in-breeding, if too long continued, results in loss of vitality, which is indicated by increased infertility, slower growth, smaller size, delayed feathering in the young, and after a time by weak and twisted feathers in adults. These highly undesirable qualities appear so gradually and increase in intensity so slowly in succeeding generations that they often diminish the value of many a flock very appreciably before they are detected.

Out-Crossing.—When such a condition is found to exist the only remedy is out-crossing. This consists, of course, of introducing the blood of some other line or strain into the flock; an expediency that is accompanied by danger of losing qualities that have been gained by several generations, perhaps, of in-breeding. There are, however, several modes of introducing new blood, some of which are accompanied by great risks, and others that, though somewhat slower in operation, are comparatively safe. New blood can be very quickly introduced by using a male of an unrelated line. The effect, as far as restoring vitality in all its phases is concerned, is almost magical, and usually, it is fully as efficacious in destroying the very characteristics to establish which in-breeding was practiced too long. Unless a male from a strain that possesses very closely the same attributes that have become so strongly established in the first strain can be secured, the introduction of new blood through the male, directly, is experimental, to say the least, and the results cannot be even approximately foretold, because even though the first out-cross produces specimens that are satisfactory, the second generation is very liable to prove disappointing in breeding prowess.

It is much safer to proceed slowly and cautiously. One safe mode of out-crossing would be as follows: a male of an unrelated line (B) may be bred to a few females of the first line (A) and the female progeny of this mating (BA) mated back to males of the first line (A), and so on for as many generations as seem advisable, using the female progeny for new blood, until the results are satisfactory, when the progeny may be recrossed with the original line, both ways. Occasionally the results of the first cross will be so pre-eminently satisfactory that males from this cross may be used upon the original line, but only in case the results are most satisfactory, and even then it is better to

guard against disappointment by also mating males of the original line to the females that are one-half new blood, by also maintaining the original line, or by both methods of safeguarding the merits of the original line.

A method commonly practiced, but not commonly enough, which is the safest from two standpoints, is to secure each year or every second year, a female from another strain, mate her with a male of the strain which needs, or may need, an infusion of new blood, and mate the female progeny with the sire or a male of the same line or same breeding as the sire. Both the males and females of this generation will usually have acquired the characteristics of the original strain to a marked degree and breeders may be thereafter selected by the same process as though the blood was of one strain.

Strain-building.—A breeder often desires to acquire, perhaps, a single characteristic, perhaps more than one, in which his strain is deficient. In order to do this, he is compelled to secure new blood from a strain that is noted for the predominance of the required characteristics. This may be accomplished in the ways that have already been indicated, accompanied by accurate selection for those characteristics. If the acquisition of several characteristics is desired, because a strain is notably deficient in these respects, the project becomes complicated, and it may be necessary to line-breed from the best representatives of one, two, or more strains.

Line-Breeding.—Among poultrymen line-breeding may mean at least one of two things. It may mean, as above, the interbreeding of two or more strains with all the blood tracing back to a few specimens, usually of extraordinary merit, or predominating in the desired characteristics. The object is to amalgamate, eventually, the blood of all the strains employed until by perpetuating the desired characteristics, a new strain becomes established.

The term line-breeding is also used to refer to in-breeding, as when the sire is bred to his female progeny, the dam to her male progeny, or the offspring are bred together, and in-breeding among the progeny is continued, so that the blood of one or more birds reoccurs often in the ancestry of successive generations. That is, when by in-breeding or by in-and-in-breeding, a line is established based upon predominating excellencies of one or at the most two birds, the desirable qualities of which are thereby very strongly fixed in the progeny, it is line-breeding with the number of the breeding lines that are traceable back to the bird

or the pair of birds that laid the foundation of the line depending entirely upon the number of generations produced and the mode of breeding.

In-Breeding and Line-Breeding. The terms "line-breeding" and "in-breeding" are often confused or misunderstood. From the foregoing, it will be understood that line-breeding may be in-breeding or may not. In case that the line is built upon the foundation of the blood of one pair of birds, line-breeding is in-breeding. Line-breeding may be practiced without in-breeding in its broadest sense by using blood of the same lines that is but distantly related.

In-breeding might be described, strictly, as the breeding of related birds, or birds that trace back to a common ancestor, but whether that is in effect in-breeding or not, depends entirely upon the closeness of such relationship. In-breeding in the mind of the average poultry breeder consists in mating the parent with the progeny, or the progeny of one common parent, at least, together.

Injudicious In-breeding.—There exists, without a chance for denial, a tendency among poultrymen to in-breed as long as the desired characteristics are maintained; and, if the desired characteristics are but "hobbies" of the breeder, the pleasure of producing these sometimes so blinds his perceptive faculties that he fails to notice defects so grave in character that they nullify the excellent qualities to which he has become wedded. This fault in such an instance must not, however, be attributed to the systems of in-breeding or line-breeding, but to the blindness of the breeder as to these faults.

Stud-Matings.—Stud mating or stud breeding is practiced sometimes to prevent the male from consorting too much with favorites to the neglect of the other females, and sometimes to obtain as many chicks as possible from a male of more than average quality. The result of this neglect, in the first instance, is to restrict the number of females actually mated, and in the second, is an unnecessarily large proportion of infertile eggs. Stud-mating assures the impartial distribution of the male's powers of reproduction. A larger number of females may be fertilized by the same male by following this method, which is to allow the male and each female to mate only at stated intervals. In order to thus restrict the number of services each female shall receive, the males and females are kept separate, and at given intervals the females are placed in the male's pen or yard, one

at a time, and removed either immediately after mating, or when the next female is brought to the male. When trapnesting is practiced, it is handy to take the hen from the trapnest after laying to the pen in which the male is kept.

Resting Males.—Quite another method to increase the percentage of fertility of the eggs by overcoming the neglect of some of the females by the male, is to use different males on alternate days. It is reasoned that with two males, fewer females would be neglected, as the males would be unlikely to select the same favorites. However that idea proves out, the common practice of confining each male on alternate days certainly affords an opportunity to rest, and eat sufficient food, of which opportunity a male, more than probably, does not avail himself while running with the females. Males, under this system, keep in better condition physically, and consequently are more able to propagate strong and vigorous offspring.

Large Matings.—Infertility of hatching eggs, accountable to the favoritism of males, is naturally infrequent in breeding flocks so large as to require the presence of several males. In this case, the explanation offered in the preceding paragraph remains true.

Individual Disposition.—The disposition of the fowl should receive serious consideration. Very often we see such individuals that when at a distance or unaware of the fact that they are under observation or in close proximity to a human being or any animal except those of their own genus, pose strikingly and show splendid form; yet when approached, go all to pieces, as the expression is, which means that they become so frightened that they lose all style, and all semblance of correct shape disappears. The most kindly overtures and best efforts to accustom these individuals to the ways of complete domestication are wasted, and only one conclusion is possible, namely, that such birds lack the ordinary intelligence even of their order of animal life. Such individuals are of little use either in the show coop or the breeding pen. In the show coop, because they stand unnaturally and awkwardly, and seem persistently intent upon making an escape, and must consequently show in poor form; and for breeders because dispositions as well as any other characteristics are transmittable and, more than that, it is admitted that the contented, happy hen is the hen that lays most frequently, from which it follows that these individuals that lack contentedness to the extent of never being competent to adjust

themselves to their surroundings are poor layers as well as poor breeders and show birds.

From this it may be logically inferred that occasionally a bird reverts to its wild ancestry and is incapable of true domestication.

Mendelism*.—Mendelism is a law of inheritance discovered by Gregor Johann Mendel in 1868, and rediscovered by De Vries, Correns and Tschermak in 1900. It is generally considered under three heads: Unit characters, dominance, and segregation. The important feature is the latter—that is, the segregation of potential factors in the germ cells of crosses and their chance combination.

In animal breeding, absolute purity of all inherited factors is difficult to obtain, as the parents even in highly selected stock generally differ in their inheritance. Therefore, segregation and recombination invariably occurs. Hence the necessity for constant selection toward a desired end.

If the breeding of fowls involved simply one, two or a very few characteristics, the application of Mendelian principles would be easily followed and understood, but, as at present practiced, this application in the breeding of standard fowls with their many requirements in shape, color and markings, becomes a difficult problem.

However, the application of the Mendel law has had little, if any, bearing upon the accomplishments of breeders of standard-bred fowls. It is only within a very few years that Mendelian principles have been studied in this connection, and at the present time only a very few of the more studious and best educated fanciers and breeders are making efforts to apply these principles.

However, several of the state educational institutions and experiment stations are applying these principles, and closely observing and recording the results. The most important application is in connection with the inheritance in fecundity, the one feature in breeders that may be accurately stated, possibly accurately measured, though even in this case, the influence of location, environment and climatical changes from season to season, month to month, etc., may, of course, affect the results.

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*For a complete treatise of this subject, the reader should consult some work on "Genetics."

CHAPTER II.

PRINCIPLES OF BREEDING FROM POULTRYMAN'S STANDPOINT

Whatever progress has been made in the development of different races of fowls, and from the Jungle Fowl to nearly one hundred and fifty distinct varieties, all of which have distinguishable and distinct symbols of beauty, marks as great progress as has been accomplished in any branch of animal breeding, has been the result of the application of only a few elementary and fundamental principles.

"Like Begets Like." Upon this principle as a foundation has rested the entire structure of standard-bred poultry breeding. Coupled together with another principle quite as elementary and possibly quite as fundamental, namely, that defects in one parent may be corrected by selecting for the parent of the opposite sex one that excels in the same character in which the first was defective, or one that fails in the same character as the first, but in the opposite direction, it is responsible for the progress made thus far.

This amounts to the following precepts: When two birds of the opposite sex having like characters are mated, the progeny will be like the parents with respect to these like characters; when the characters are unlike in the parents, these characters in the progeny will vary between the extremes exemplified by the parents, with a tendency for the greater number of the progeny to show a mean between these extremes. Together these simple rules account for the development of the different breeds, the creation of the new varieties of the same breed, and the improvement and development of those varieties already established.

Why Like Begets Like.—Of this precept no fundamental or scientific explanation can be offered. It is accepted as an axiom to a certain extent, though to the full extent it does not, perhaps, quite conform to modern theories. It is as fundamentally true in the breeding of all other forms of life as in the breeding of poultry. One of the first facts that any student of either plant or animal life observes is that every seed produces after its kind. The maxim "like begets like," then, is in a general way axiomatically proved. In animal breeding, the reproducting sex

cannot fertilize itself, hence the proof of the maxim in its entirety cannot be expected. Breeders of poultry go this far, however, when male and female alike in certain particulars are mated together, that it is expected that the progeny will be like the parents in these particulars. For instance, when a male and female both have a comb with five points, a majority of the chicks from the pair would be expected to have five-pointed combs. What deviation did occur would be attributed to the ancestry of one or the other, or both, of the parents. Another example, specimens of the four-toed variety mated together produce four-toed varieties in all cases, while those of the five-toed variety when mated together produce five-toed chicks in nearly all cases. The same applies when two specimens of the opposite sex with reddish-bay eyes are mated together. Deviation would be accounted for by those of the ancestors that did not have red eyes.

To Offset Defects.—As an example of the second principle in general use by poultry breeders everywhere, that of correcting a defect by mating with specimens of the opposite sex that fail in the opposite direction, a male with a four-point comb, one point short of standard requirement, would be mated with a female with six points on her comb, and vice versa. If one of the mated pair had light eyes, it would be mated to a specimen with very dark reddish-bay or even with deep red eyes. A specimen of a breed which is required to have five toes that has but four would be considered so faulty that it would not be used as a breeder; it is a disqualified bird. (See page 16 for definition.) It is just as serious a matter when the specimen of the four-toed variety has five toes. It is discarded for the same reason.

In many cases this principle is modified to the extent of mating birds that are faulty in certain respects to the opposite sex that are as near perfection as it is possible to obtain. Faults may not be corrected as speedily in this way as by the other, but the method is more secure in the long run, because it is better that the fowls should inherit one excellent feature than two faults, even though they be of opposite tendencies.

Pedigrees.—Broadly speaking, these rules for mating have been very largely depended upon by breeders of standard-bred poultry, whether for exhibition or commercial purposes. In practice, the pedigrees for many generations are also usually kept to help the breeder in applying these precepts, especially of

the male side, as that is much more easily recorded than the female side, though when a line of heavy egg-producers are sought, the record of the dam becomes paramount and is invariably kept as it is, or should be, in the female line when double matings are used to produce exhibition specimens. Pedigrees are of great assistance, especially if the characteristics of each generation can be kept in mind, because the more generations in which a certain character appears the more fixed this character becomes, whether it is meritorious or defective.

Word descriptions, feathers and photographs of each sire and dam are the most common means of keeping the individuality of each generation in mind, some depending upon one or two ways, while others use all three. However it is done, it is essential, not only to know the pedigree for several generations, but it is equally essential to have an accurate recollection of each sire and dam for a number of generations, as it is the only way to know how the line is producing for this or for that desired quality.

Uniformity.—Uniformity is also desired, not only in each breeding pen, but in the ancestry as well. The more the chicks resemble the parents and the parents resemble their parents, the greater is the proportion of exhibition birds to be found in the flocks year after year, provided, of course, that the early ancestry was such. The desire on the part of breeders has been to produce uniformity in their flocks, and to do so, they have often bred from single pairs of birds, though the same results may be accomplished by keeping a record of both sire and dam, even though more than one female is allowed with the male; the offspring are then full brothers and sisters, or half-brothers and sisters, and can be recorded as such. By this method of mating closely related individuals, but few generations are required to establish most uniform flocks, the quality of which is, however, determined largely by the quality of the parent stock and the breeder's knowledge of this particular line of birds, and his skill in properly weighing the power of transmission of each individual.

Prepotency.—The power, which it is admitted some birds possess and some do not, to transmit their own characteristics to their offspring is called prepotency. In reality, it may be said to be the difference in the ability or power to transmit that exists between the parents. We sometimes hear of an application differing slightly from the above, because there is occasionally an individual that is so very prepotent that one or more of its prominent characteristics are distinguishable in the progeny for several

generations. In such instances, the individual that originally possessed and first transmitted this characteristic is often spoken of as being very prepotent.

The most generally accepted theory of explanation has been that by constantly selecting and breeding specimens with certain characteristics, these characteristics become fixed in the progeny, and after a certain number of generations, more or less, the aforementioned characteristics are transmitted in a remarkable degree by certain individuals.

The qualities transmitted vary. That is, a bird may be prepotent in certain characters and fail to transmit others. One bird might transmit its constitutional vigor, or the shape of comb only, while some birds impress their characteristics so generally and perfectly upon their offspring that we note a general resemblance to the parent of the same sex. It is not uncommon for an individual of wonderful constitution and vigor to throw several offspring bearing a striking resemblance to the parent in a single season.

The Value of Prepotency.—The value of prepotency can hardly be overestimated. When that quality is possessed by a female of high egg-producing capacity, its worth increases with each generation, according to the egg-producing capacity, and as the number of the descendants in the flocks increase.

Male One-Half the Flock.—And then, if the foregoing is true, how important an asset prepotency must be in any male which, because he exercises his share of influence upon each and every female with which he mates, is obviously one-half the flock. If the male is of unusual merit, or especially if he possesses more merit than the average of the females associated with him, and if through his ability to transmit his own characteristics he exercises such an influence upon the progeny that he becomes more than one-half of the flock, we can readily see the advantage of prepotency in such males.

Sex Control of Characters.—Breeders generally prize prepotency in a male. Ample explanation has been offered by pointing out how the male is one-half the flock. There is, too, the growing belief that the male is responsible for certain qualities, but opinions as to just which ones differ materially. Some think the male has most influence upon color and head points, while the female controls the shape of body, etc. But it must be admitted that no tangible proof of these various opinions can be secured.

Constitutional Vigor.—That constitutional vigor is a vital factor in all branches of poultry husbandry will undoubtedly

have been inferred from several of the foregoing passages. The necessity of that quality described by such terms as health, vigor, stamina, hardiness, ruggedness and several more, perhaps, is so generally understood and recognized that it requires little more than passing notice here.

It is also thoroughly understood that this quality is just as vitally essential in the yards of the most exclusive fancier, who rears but a few choice birds each season, as on the farm of the commercial breeder who raises his flock for the number of eggs it produces or the number of pounds of flesh; the first cannot perpetuate his flock to reincarnate the ideals of his dreams, the second cannot produce the eggs or the pounds of flesh without fowls of rugged constitutions, which must prevail in the stock. To maintain health in a flock and to hatch chicks that inherit a strong vital force, weak birds must not be admitted to the breeding yards. That is, to maintain constitutional vigor in your flock, select as breeders those birds that possess that essential quality.

The strongest constitutions may be undermined by injudicious feeding, by undue exposures, poor sanitation and poor management generally. These are topics taken up in a later chapter in this work.

PART III.

STANDARD BRED PLYMOUTH ROCKS

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SECTION VI

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SECTION I.

CHAPTER I.

PLYMOUTH ROCKS.

PLYMOUTH ROCKS are classified as "general purpose fowls." The pioneer variety, the Barred Plymouth Rock, then called Plymouth Rock, was first exhibited in 1869 at Worcester, Mass. They are a composite of several different blood lines, the first and most prominent of which were the Black Cochin and Dominique.

In size the Plymouth Rock is intermediate between the Asiatic and Mediterranean breeds, the most typical and useful specimens being those which are nearest to Standard weights.

The six varieties are identical except in color. The color of the Barred variety is exceedingly difficult to describe; in fact, the true and exact shade can be learned only by observation; the colors should be modified black and white in all sections, each feather crossed by regular, narrow, parallel, sharply defined dark bars that stop short of positive black; the overlapping of the feathers producing a bluish tinge when viewed under certain light reflections.

The White variety—plumage pure white, as the name indicates—should be free from creaminess and brassiness. The combination of pure white plumage with bright red comb, face, wattles and ear-lobes, and yellow legs and beak is both desirable and obtainable.

The color of plumage of the Buff variety should be a rich golden-buff, free from shafting or mealy appearance, while extremes of light and dark shades should be avoided, and a harmonious blending of buff in all sections is most desired.

The contrast of black with white in males and with steel-gray in females will attract many to the Silver Penciled variety. The exquisite penciling with the rich plumage and mahogany surface of the Partridge female and the brilliant red and greenish-black plumage of the male, give the breeders of this variety an opportunity of testing their skill in mating that is equaled in but few varieties of Standard fowls. The Columbians with their white breasts, backs and wing bows sharply contrasting with the black markings of necks and tails, present also an attractive color scheme.

CHAPTER II.

THE ORIGIN AND DEVELOPMENT

A popularity among the masses of poultry keepers that is as wonderful as it is universal places the Plymouth Rock foremost, and makes it preeminent as a breed in the poultry world. A popularity—questioned by none and admitted by all—is not the result of a mere freak of public fancy. Growing steadily in favor as these fowls have for over fifty years, this popularity cannot be said to be the outcome of the prearranged plans or systematic efforts of any man or body of men. It has its foundation on merit, but it is not solely because these fowls are money makers in the several phases of commercial traffic that they enjoy the highest favors with all classes of poultrymen. Because the structure was well planned, and the improvements well considered and judicious, these fowls are today profitable as egg-producers, as broilers, as roasters, as the all-purpose fowls, and for those who succeed in producing the best type and plumage, as fancy fowls. To these qualities must be added their rugged constitutions, mild dispositions and their adaptability to confinement and domestication.

As fancy fowls their popularity is no doubt due to the peculiarly regular and systematic markings or the pure colors of their plumage, intensified by the difficulty in producing the same to any degree approximating perfection. Failing to accomplish this the breeder has always the market qualities to rely upon.

All these things and more have contributed to the popularity of the Plymouth Rocks, but acknowledged facts do not interest us. Our interest seeks to discover the foundation of these qualities, so fortunately combined; what combinations of blood, what conditions, what circumstances contributed to the development of a fowl suited to all. The explanation is best given in the history of its ancestry. We shall see as we trace the development of this fowl, the source of its rugged constitution, the reason for the good laying qualities, and account, we hope, in a measure at least, for the approaching perfection of plumage.

The first real interest in pure-bred fowls in America, of which we have any account, appeared in New England about the middle of the last century. At that time all pure-bred fowls were either of Asiatic or European origin.

The Popularity of the Asiatic Fowls.—The former, on account of their size, which in comparison with that of the common farm yard fowls of those days or in comparison with that of fowls of European blood, appeared gigantic, and their magnificent appearance, were extremely popular. At times this popularity was even sensational, and it may be said that fowls of Asiatic blood were relied upon to supply the sensational features for the early poultry shows—the first at Boston in 1849, the several subsequent shows in the same city, as well as the one held in Barnum's Museum in 1854. For years these Asiatic fowls were the most sought and brought the highest prices; but even at that they did not afford general satisfaction.

This Popularity Wanes.—They were large, but it required a greater length of time to grow a large fowl to maturity than a small one. It required too long a time to grow these extremely large specimens. They did not lay as well for most poultry keepers as the smaller birds. Mediterranean breeds had been imported from Italy, Spain and England and these were acknowledged the superior of all others as "egg-machines." Compared with the Asiatic or even most of the mongrel stock, these were very small and fell materially short of the weight desired of a good market fowl.

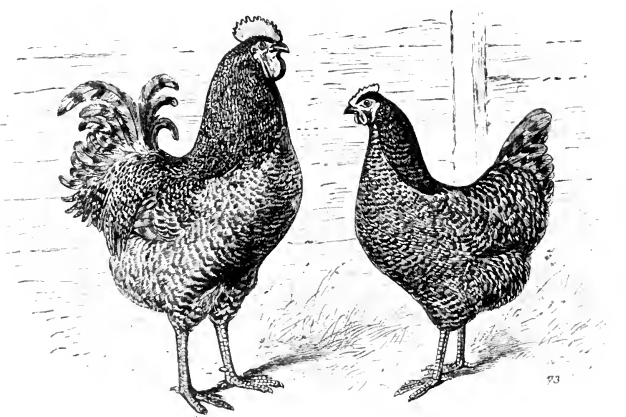
A General Purpose Fowl Demanded.—The failures of these different classes of fowls to meet both requirements became more and more apparent as time elapsed, and the more apparent the failures became the stronger became the desire to find or create a fowl that, while it could be depended upon for a liberal production of eggs, would also meet the demands for a superior table fowl. Many attempts were made before success was achieved. Some dated back prior to the middle of the century. Of these we have the best account of one by a Dr. Bennett of Plymouth, Massachusetts, of which we find a very good description in The Poultry Book (1850), of which the same Dr. Bennett was the author.

"THE PLYMOUTH ROCK FOWL"

"I have given this name to a very extra breed of fowls which I produced by crossing a cockerel of Baylies' importation of Cochin China with a hen, a cross between the fawn-colored Dorking, the Great Malay and the Wild Indian; having five primitive bloods—Shanghae, Malay, Game, Turkish and Indian —traceable by referring to the history of those breeds and their crosses respectively. There are several of this breed in

Plymouth, from my original stock, belonging to Messrs. John H. Harlow, Samuel Shaw and myself, that are now a little over one year old; the cockerels measure from thirty-two to thirty-five inches high and weigh about ten pounds, and the pullets from six and a half to seven pounds each; forming, in my opinion, the best cross that has ever been produced.

"The pullets commenced laying when five months old, proving themselves very superior layers. Their eggs are of a medium size, rich and reddish-yellow in color. Their plumage is rich and variegated; the cocks, usually red or speckled, and the pullets darkish brown. They are very fine fleshed and early fit for the table. Their legs are very large and usually blue or green, but occasionally yellow or white, generally having five toes upon each foot. Some have their legs feathered, but this

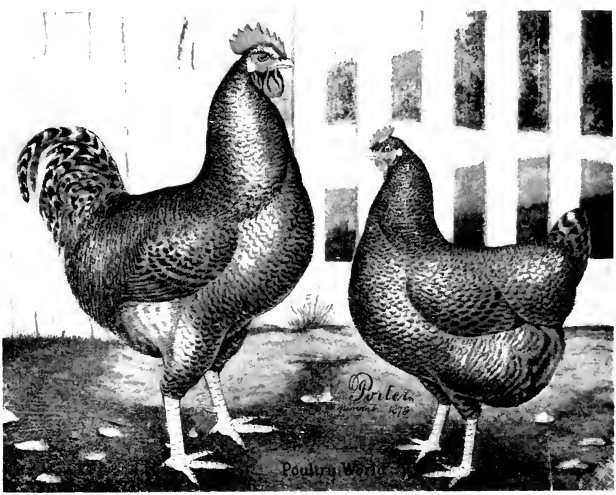


One of the earliest pictures published of the American Plymouth Rock, appearing in Rural New Yorker, 1872, and in Stoddard's Poultry World, 1873. [Observe darker plumage of the neck feathers and coarseness of barring in the larger feathers, combs irregular and serrations very numerous, tail feathers of the male are represented as being blown by the wind.]

is not usual. They have large and single combs and wattles, large cheeks, rather short tails and small wings in proportion to their bodies."

From the following paragraph it seems that Mr. G. P. Burnham secured some of the fowls from the Doctor, which is quite likely, as it appears from the writings of Mr. Burnham that he and the Doctor, as he alludes to him, were very friendly. In a letter to the Massachusetts Ploughman, Mr. Burnham describes them as follows:

"The cock here represented weighs nine pounds and a quarter, and the two pullets thirteen pounds. The stock came from Dr. Bennett and I am daily more and more pleased with this fine species. I have the 'Plymouth Rocks' at all ages now—from a few days up to about eight months old; and my specimens em-



Halftone reproduction of a colored lithograph of Plymouth Rocks by Porter in Stoddard's Poultry World, 1879. This shape was popular during the 80's and was copied to represent birds of that period. It shows a substantial and rugged type. This pair represent a larger, heavier type, with color of plumage and shape of combs considerably improved over those of the pair published in Poultry World, 1873.

brace five or six different broods. The color of all of them is peculiarly uniform and I am satisfied that the variety (or breed) is now well established. The body plumage on the pullets is a rich deep brown, speckled with golden-tipt feathers; the under down is black (or a deep blue-black), and the tail is brown, black and gold.

"The legs of the pullets are very dark colored, and one-half of them or more, are five toed; but some of them do not come so. The comb is single, and the wattles thin and small. The head and neck are well formed, the legs are shorter than the average of fowls, and the hens are not only deep and broad-chested, but the bodies are proportionately very long, as you will observe in the drawing.

"The roosters are noble birds—among the finest I have ever met with. The plumage of the roosters is dark red hackles on neck and rump; the legs are bright yellow, slightly feathered; the body, dark red and green relieved with stray feathers of a golden tint; and the under portion of the body and breast is a rich, deep, glossy blue-black—partaking of the plumage of the Wild Indian fowl, the original cross. The tail-plumes on the above crower are not grown out as yet, of course, nor does he yet show any spur; but he is pictured exactly as he is at this time, after his first moult. When he is in full plumage the tail feathers are heavy and give the male bird not only a much larger proportionate appearance, but very greatly improve his form."

Mr. John Giles of Providence, R. I., a prominent poultry fancier and importer of those times, writes: "The 'Rocks' are a splendid bird, and if their table qualities prove to be good, will make a valuable breed of fowls." Again in the same letter he says: "On more close examination of the 'Rock' chick, I am more confirmed that they must prove an invaluable breed. Could you not cross so as to have one distinct color of leg and plumage?"

Other descriptions and testimonials follow. These fowls are commended for their laying qualities as well as for their uniformity of appearance.

Did the First Plymouth Rock Become Extinct?—Neither from these descriptions nor from the accompanying illustrations could one agree with the deductions of Harrison Weir, the noted English artist and author, in his work, "The Poultry Book," London, 1871, though the logic is very plausible at a distance.

"Now it is both curious and very extraordinary, to say the least of it, that Mr. Spaulding should adopt for his breed the cognomen of that of Dr. Bennett's and Mr. G. P. Burnham's new variety, and which, according to the portraits in Bennett's book, so much resemble in shape the New Plymouth Rock; and, further, it is not so clear that those of Dr. Bennett had really disappeared, for in the last paragraph in 'the Doctor's' book regarding them, Mr. John Giles distinctly states that: 'I shall endeavor hereafter to produce them with uniform plumage, preferring the dark colour, dark legs and four toes only.' To me the name thus given to a new breed, being one belonging to another, is very unsatisfactory, nor does the after variations of the Barred Plymouth Rock, borne out in the progeny, accord with this asserted origin; nor is it likely but that the name had some notoriety, or why adopted if it was so indifferent as to have become extinct?"

One could hardly imagine that a possibility of developing a fowl of the type and plumage of the modern Plymouth Rocks from the crosses named by Dr. Bennett exists. Upon this question Mr. Weir seems the only exponent of this theory of the origin for the Plymouth Rock of the present day. All writers during the intermediate period, even the Doctor's friend, Burnham, seem to repudiate such a theory.

Mr. F. H. Ayer in his pamphlet (1878), after describing the Bennett Plymouth Rocks goes on to state: "The modern Plymouth Rock is quite a different fowl from the one we have just described and was produced from different stock though, as is too well known to need comment, it is a cross-bred."

Stoddard in The Plymouth Rocks (1880) writes: "Whatever their excellencies, the incipient breed ran out completely, or ran into anything or everything by admixture with adverse breeds, and for years no Plymouth Rocks existed. Then came another fowl of entirely new blood and finding the name ready-made but the fowl it used to represent extinct, accepted it as the title best suited to its solid merits. At this point the old line Rocks disappear; henceforth the title 'Plymouth Rock' means the fowl of today."

Exactly the same views are taken by Corbin n 1879, Bishop in 1880, Wallace in 1888 and many others. The periodicals of that time, however, show that the new breed was quite widely distributed and received its full share of publicity. Though they failed to establish themselves and lacked uniformity and a positive pattern in plumage, such was the call for a fowl that

combined prolific egg producing and good market qualities that until they proved themselves, as Stoddard says they were, incipient fowls, they were eagerly sought.

Efforts to Establish a General Purpose Fowl Continue.— Then for some time no Plymouth Rocks existed. But we have reason to believe that efforts to establish a fowl of the general purpose type continued. It was not a difficult matter, however, to combine opposite types and decidedly dissimilar patterns, but it proved to be a very difficult problem to breed the desired qualities together and make the breeding hold any definite type or color pattern. No blood seemed to amalgamate with that of the Asiatic which was invariably the basis of these crosses. At last, however, blood sufficiently strong to hold its own with the heretofore dominant Asiatic blood was mixed with it. The result was most gratifying. Strange to say, this new blood— that is, new in the sense of being untried—was the fowl of native development, of unknown origin and commonly kept on the farms and in the back yards of New England.

ORIGIN OF THE MODERN PLYMOUTH ROCK

By common consent the cross that originated the Plymouth Rock was made in the yards of Joseph Spaulding of Putnam, Connecticut. A few of the progeny of the first cross were sold to D. A. Upham of Wilsonville of the same State who, after breeding them but a few seasons, perhaps no more than two, was the first to present them to the public. Plymouth Rocks as exhibition fowls made their first appearance at Worcester, Massachusetts, in March, 1869. The above facts are not seriously disputed, if disputed at all, nor have they been to the writer's recollection, which extends back to the early 80's.

It would hardly seem that a more competent or trustworthy source of information as to the origin of this new race would be found than the same Mr. Upham who first brought them to the public's attention and but a few years after the original cross to establish them was made.

Mr. Upham's Account.—Mr. Upham tells this story in the Poultry World (1876), only seven years after he first exhibited Plymouth Rocks and but ten or eleven years after the original Spaulding cross was made. This account, as related at that time, we are glad to reprint:

"Nearly ten years ago we bred, named and introduced the first fowls and chicks of this variety ever shown to the public

and they were produced first by a cross between a common hawk-colored (so-called) single comb Dunghill cock, with pure black Cochin hens, not Java hens (which invariably have smooth legs, entirely free from feathers). From this cross a large majority of the progeny were cockerels, very large and fine symmetrical birds, many of them of the same plumage as their sire, some with legs heavily feathered, a few with legs entirely free from feathers.

"The pullets, a large percentage, were black, legs heavily feathered, a few were very handsomely marked, black and white, with legs entirely free from feathers, others' legs slightly feathered.

"In the Fall of 1866 my attention was called to these chicks by a friend, and we started to see them, and found them in the yards of one Mr. Spaulding, who then lived in Putnam, Connecticut. Mr. Spaulding bred fowls for market purposes only, and was noted for producing the very best early and late chicks of any farmer around, always obtaining higher prices than his neighbors for his choice poultry. We selected and purchased a cockerel and two pullets, which had clean, yellow legs and of the desired plumage we wished to produce, and bred them. About one-half of their chicks were of the desired plumage. I then selected the best pullets and bred them to a cock of my own raising, of the same plumage, a descendant from stock which originated from eggs purchased of G. P. Burnham, about twenty-five years ago, said to be Brahma Pootras, or what some fanciers called Gray Chittagongs in those days, which were very large, noble fowls; but with me this variety was crossed with Cochins and English Gray Dorkings, but the cockerels always retained the original steel-gray plumage.

"The second cross from this strain produced very satisfactory results. Most of their chicks were of the desired color in both sexes; very few black, and most of them with legs free from feathers, and bright yellow in color. From this cross I have selected and bred from the very best specimens, and by judicious mating have, for the past three years, succeeded in breeding them as true to feather and points, and a greater number of fine exhibition birds from a clutch of eggs, than from any other variety we ever bred. They are now very large, fine in shape, and very handsome plumaged birds. They fledge quite young, grow rapidly, mature earlier than any other fowl of their size, are very hardy and easy to rear, and for early marketing there is no breed to be compared with them; are fully equal to

the Brahmas as Winter and superior as Summer layers, not frequent sitters, excellent mothers, great foragers and are truly the farmer's fowl. Matured weights, on an average, from twenty-five to thirty pounds the trio. Extra fine specimens have been known to reach thirty-two pounds.

"This, in short, is the true origin and general characteristics of the genuine Plymouth Rocks of today."

Vital Points in the Upham Account.—We gather from this extract several facts of which we are glad to have knowledge. First, it sets the date very close to the one generally accepted by interested fanciers and breeders. "Nearly ten years ago we bred, named and introduced the first fowls and chicks of this variety ever shown to the public . . . ." Writing this in 1876 would make these statements coincide with other reliable data on this point. Note in this connection the statement beginning: "In the Fall of 1866." This, then, is the date and the Fall is the season when Mr. Upham produced his foundation stock. It is certain that he did nothing in the line of breeding or rearing during 1866 because of the lateness of the season. "We selected and purchased . . . and bred them." This accounts for the season of 1867, but Mr. Upham states further: "We then selected the best pullets and bred them to a cock of my own raising . . ." "The second cross from this strain produced satisfactory results. . . ." If it was at this point that Mr. Upham selected the specimen for the first public appearance of the Plymouth Rock, and it is certainly not unreasonable to presume that it was, because to quote his own language, "most of their chicks were of the desired color in both sexes; very few black, and most of them with legs free from feathers, and bright yellow in color," and birds that bear such a description would seem to be fair show specimens, especially during the formative stage in a breed. March, 1869, as the date of the first appearance, coincides with the facts as stated in the abstract, as chicks shown as early as March, 1869, must have been reared in 1868, which coincides chronologically with the above statements. We must not overlook the statement which, on account of the controversy it has occasioned, is the most pertinent, vital and hence the most interesting of all the facts presented, that they were produced first by a cross between a large common hawk-colored (so-called) single comb Dunghill cock, with pure black Cochin hens, not Java hens (which invariably have smooth legs, entirely free from feathers), as this statement involves the point of a contro-

versy that was kept alive for years, and though the fire of debate smoulders, it rekindles occasionally and burns freely for the time being.

The Ramsdell Account.—The other side of the controversy rested upon the statement made in an article by H. S. Ramsdell of Connecticut, published in the Poultry and Pet Stock Bulletin of March, 1873, in which is found the following:

"Our modern Plymouth Rock fowl is in no way whatever connected with the Plymouth Rock produced by Dr. Bennett some twenty-five years since, from a cross with the Asiatic fowls. None of these bloods enter into the composition of the present stock. They are a different bird altogether, and were produced on the farm of the late Joseph Spaulding of Putnam, Connecticut, which is situated about one mile from my own. I was intimately acquainted with the Mr. S——— while he lived, and I was thus given an opportunity of **knowing** the facts of which I speak.

"Some thirty years since, John Giles, Esq. (well known to the poultry world), introduced a fowl into this vicinity called the Black Java; its plumage was black and glossy, its size large (Mr. G——— said the pullets had sometimes reached eleven pounds), they were an unusually hardy bird, with a dark, slate-colored smooth leg, and the bottom of the foot yellow. They proved good layers and of extra quality for the table; not coarse like most of the large-sized birds, but fine and juicy. I sold a few of these birds to a Mr. Thayer, of Pomfret, of whom Mr. George Clark of Woodstock, Connecticut, purchased some—he supposed the same. Mr. Clark passing Mr. Spaulding's yard one day, noticed his fine flock of Dominiques and proposed bringing a few of his Javas to cross with them, to increase the size. Mr. S——— accepted the offer and when the chickens were grown rejected the black ones, and those with double comb, reserving to breed from only the single-comb birds which retained the Dominique color or near it. They were usually darker of plumage than the Dominique, the legs sometimes resembled the Java—dark with yellow feet—but were mostly yellow, or yellow with a slight streak of dark on the front of the leg, which with the feet are free from feathers. We received some eggs of this cross from Mr. S——— as a present, and purchased some fowls of him. Of the first produce, one hen weighed over eight pounds, and another reached nine pounds and three-quarters. We soon had a fine flock of them. The fowls were spread around the neigh-

borhood and were much sought after, but had, as yet, no name. A gentleman asked me what I called them. Not knowing that any of the Bennetts were now in existence—I had not seen any of them for years—I said, 'Plymouth Rocks.' The name passed from one to another and they were soon generally known by that name. Our opinion of the fowl is that when bred pure, as it came from the hands of Mr. Spaulding, it has few equals and no superiors. True, they will now and then throw a black chick, resembling those we had twenty-five or thirty years since, but we find they grow fewer each year and doubtless will soon disappear altogether."

This article coincides in names and circumstances with Mr. Upham's verbal account given the writer in the Summer of 1890, except that Mr. Upham insisted that the black Asiatic was a Black Cochin and not a Black Java. Both agree that a Java was a large, black, **smooth legged** fowl, while it is well known that a Cochin is and always was a feather legged fowl.

Views of the Early Writers.—F. H. Ayer in "The Plymouth Rock," a pamphlet published in 1878, takes the Ramsdell view of the Java-Cochin controversy in the following language:

"'Who shall decide when doctors disagree? Whatever the merits of the Upham-Ramsdell controversy may be, the question of the rival claimants has long since settled in the minds of all breeders, and a review of their statements is unnecessary. The Plymouth Rock is a cross of Dominique and Java blood, and this fact is of more importance in breeding than the name of the first breeder."

F. H. Corbin, in a pamphlet entitled "Plymouth Rocks," 1879, also accepts the Ramsdell view, or is inclined to. He writes:

"The Upham-Ramsdell controversy was conducted with both vigor and bitterness. The conceded ability of these gentlemen, together with their readiness of pen, only magnified the contest, diffused a knowledge of the question among the poultry fraternity and caused others to take up the pen, both as principals and advocates. After a time it began to be uncertain whether any such breed ever existed, and, if there was any, where or from whence it sprang.

"Another question intensified the controversy. While all were agreed as to the Plymouth Rock being a "cross" breed, scarcely any two were agreed as to what the cross was. The Black Java, Cochin, Dominique, Dunghill, Gray Chittagongs and English Gray Dorkings were all named as entering into the

cross. This disputation itself showed that the fanciers considered the Plymouth Rock well worthy of attention, and also that it was advancing with rapid strides to the first place in the estimation of breeders generally.

"As before intimated, there were several different suspected origins to this breed, and some two or three, perhaps, worthy of mention. The most reliable one, however, in the estimation of breeders of the present day, was the cross of a single combed Dominique cock with Black Java hens. This may not be admitted by all, but it has the best authority, and is now generally acquiesced in."

"It is now universally admitted that the Plymouth Rock is the resultant of the process of breeding the old-fashioned Dominique—the native American fowl -on Black Java hens, a sort now nearly or quite unknown in this country; but who originated this cross is a matter of dispute which probably will always remain in statu quo. It is enough for the breeders to know that the union of the hawk-color and the black was effected, and few will care for purposeless search beyond Drake and Ramsdell or Upham. We are all looking forward and not backward, and were the entire past of this breed—save the knowledge of what the cross was—blotted out, breeders would be no way troubled to manage their stock as successfully as ever. Still, the history of the breed contains much of interest and we will give briefly the history of Plymouth Rocks—ancient and modern—before going into the discussion of questions more immediately affecting their treatment in the present."

Joseph Wallace, a little later, 1888, in "Barred and White Plymouth Rocks," accepts the view of others of a Dominique and Java as the first cross.

As to the statement of Ayer, who seems to think that there are several claimants for the honor of making the first cross, and that Upham is one of them, the writer is in a position to assure all readers that Upham did not in his later years, if he ever did, claim to have made the original cross, but accords that honor to Spaulding upon the suggestion of another.

Corbin rather evades a discussion, but comes to a conclusion without presenting argument or facts. The same may be said of all the others, except perhaps Stoddard, who qualifies by saying that the Java involved is not the Java of the present day,

which would appear to be true, inasmuch as there was at that time no such thing as a Standard Java, which we did not have until 1883. The fact is, Plymouth Rocks antedated Javas in the Standard.

The argument most often advanced in favor of the Java theory is that the Black Cochin was unknown in America or at the best was so very scarce that it would not have been used in all probability or possibility. A writer, himself a student of Cochins and Asiatics particularly, makes the following statement in the May 15, 1901, issue of the Farm Poultry, published for many years in Boston:

"Black Cochins were so very scarce from the start that the few in existence were bred with Whites and Buffs to increase, improve and invigorate them. Their original quality was not the equal of the others. This cross-breeding injured their color so much that for many years they were almost discarded. If the English, who were so directly in business communciation with China, could not obtain Black Cochins, how could it be possible for Mr. Giles to import them? At the same time, what were known then as Black Javas are mentioned continually, and they were, without doubt, what would be called an Asiatic fowl largely Malay.

"Without any word from us we feel that the records fully prove that the Dominique fowl has at all times in America been known as such (the other names applied here have been erroneously used); that the facts show that the Spaulding or original Plymouth Rock came as the result of crossing these American Dominiques with what is known as Black Javas."

The scarcity or non-existence of Black Cochin seems to be the actual basis of the Java theory, though we find inference that Mrs. Spaulding was originally responsible for its circulation.

In regard to the references to the Upham-Ramsdell controversy and their rival claims to priority, the particulars of which none of them state, the writer cannot find that such a controversy exists or ever has. Neither did Mr. Upham in his conversation with the writer bring up the question of whether he or Ramsdell was the first to purchase of Spaulding. There is the possibility, of course, that Ramsdell purchased first and another possibility that Upham in that case might have procured his stock of Ramsdell. He says, however, in his first account, here-

tofore presented, and in all his subsequent accounts, that he purchased of Spaulding, which should mean of Spaulding direct. We have no printed or written statement to the contrary as far as the author is aware.

The only incident known to the writer that seems to indicate that Mr. Ramsdell did breed Plymouth Rocks before Upham happened on the occasion of a visit by the writer to a poultry show in Worcester, Massachusetts, where he found the exhibitors present in a mild state of excitement over a visit of an old minister who came to this show and was introduced by Mr. Upham as the first breeder of Plymouth Rocks. These exhibitors all expressed their regrets that I should not have been there the day before, so as to meet the clergyman so distinguished. No name was given, but later inquiry elicited the fact that it could hardly have been other than the Rev. H. S. Ramsdell. The exact date of this show cannot be given, but it must have been in the early eighties or about fifteen years after the Plymouth Rocks for the first time made their public appearance in the same place.

Black Cochins in England.—As to the existence and supply of Black Cochins in England, we shall have to rely upon the English poultry literature of that period and for some time before:

Martin Doyle in 1857 writes of Black Cochins as being rare and of an instance of two black sports from a pair of light Buffs. This states definitely that Black Cochins were not unknown six or eight years before it is claimed they were originally used as a foundation for the new Plymouth Rocks.

Richardson's book, "Domestic Fowl and Ornamental Poultry," gives some interesting points regarding the China fowls. On page 70 we find the statement that: "The terms Cochin China and Shanghae may be used synonomously." On page 72: "To divide them (Cochin China and Shanghae) into classes is decidedly a mistake, as no sufficient marks exist to establish them as distinct varieties." On page 74, Richardson quotes Mr. Trotter's prize essay of the Royal Agricultural Society in 1851 as follows: "The most esteemed color of these fowls is ginger; but as there are pure bred birds of almost all colors, including black and white, I am in favor of selecting them as much by their shapes as by their color.

"Shape, size, gait and weight may be assured as permanent characteristics—not so, feathers. Not only do white and black Bantams, Cuckoo Dorkings and game fowls sport in feathers,

but the more uniform breeds, the Black Polanders, the Minorcas, and even the Spanish take a white speck, spot and even feathers, when the fit is on them; so with the Shanghaes. The breeder may start in the Spring with buffs, cinnamons or partridge colored parents and their progeny in November will display all the colors of the rainbow, except, to be sure, the blue. Nay, they may put on the affirmative of due proportions of the whole as white, or the negative as black specimens." So strong is the writer, who Richardson styles as an acute and experienced amateur on this point, that he goes on, on page 87, to say that this tendency to sport may be checked, but never, he believes, subdued.

From these statements, made as far back as 1851, we can readily see what an opportunity any one had to produce in the interval between about what they chose in color of Cochins.

Page 74, after quoting Mr. Trotter, the prize essay from Royal Agricultural Society in 1851, Richardson, referring to that essay, comments upon the statements of the same as follows:

"They are valuable, coming from a gentleman who has carried off prizes for best Cochins, Dorkings, etc., at the Northumberland and Durham Society Shows."

In a work on fowls published in London, England, 1860, John Baily mentions these different kinds of Cochin-Chinas, Buff, Lemon, Cinnamon, Grouse, Partridge, White and Black. This corroborates the authors cited and others and, to reiterate it would seem, if they had Black Cochins (or Shanghaes) in England as early as 1851, that without question Black Cochins existed in England and elsewhere long before the now famous Spaulding cross was made, and if they were known in that country as early as 1851, it is strongly probable that they were bred in this country long before Spaulding created the Plymouth Rock, because there was so much in common between the poultry breeders of the two countries and English importations of all new varieties were the fad of those times.

Black Cochins in America.—But we are not compelled to rely on the fact that Black Cochins existed in England, as we have direct evidence that they were frequently met with in our earliest American exhibitions. We submit letters from Mr. C. P. Nettleton, who, at the time of writing, was a well known breeder of Light Brahmas. The letters read as follows:

Shelton, Conn., Sept. 18, 1901.

Editors, Farm Poultry.

Dear Sirs: Yours in reference to Black Cochins at Philadelphia, 1868, come to hand. Black Cochins were exhibited at that time by Mr. John Clapp of Philadelphia, A. M. Halstead, Rye, N. Y., Mr. Gilbert, Pennsylvania. Yours,

(Signed) C. P. NETTLETON.

Shelton, Conn., Sept. 18, 1901.

Editors, Farm Poultry.

Dear Sirs: Let me tell you about Black Cochins as I knew about them long ago.

I first bought some, as I called them, Black Cochins, in 1868. They were commonly called by most people Black Javas, had feathered legs, but scant feathering, hardly a bird having any feathers on the middle toe. I worked at them for five or six years to get the feathers on the middle toe. About this time P. Williams took them up, and P. Williams and myself were the most prominent exhibitors for some time of Black Cochins. Where Mr. Williams got his from at first I never knew.

Most all parties who spoke of these black birds, as long ago as 1868, called them Black Javas. Some of these kind of fowls were shown at the New York show held in Barnum's Museum long before that time (1868).

Perhaps Mr. Williams can tell you something about them. My memory don't serve me as I wish it did.

Will send you a copy of that Plymouth Rock item soon.

Yours truly,

(Signed) C. P. NETTLETON.

The show at Barnum's Museum which Mr. Nettleton referred to was held during February, 1854. According to this, Black Cochins were found in America in ample season to become one of the foundations of Plymouth Rocks.

We copy the following paragraph from "The China Fowl," by G. P. Burnham, as further proof of their presence in America at an even earlier date:

"The Black Shanghae is less common among us than any other variety. In 1850, at the time we obtained through William T. Porter from Shanghae our second lot of Light Gray birds, we found an excellent trio (cock and two hens) of the Black variety which, with the five Light Grays then obtained, and a splendid trio of Dark Brown birds, we took to Melrose to breed. The Black ones bred true to the originals and were of the best color (for their dusky metallic hue) that we ever saw. We did not fancy them greatly, however, and bred them only one or two seasons. We give portaits of the Black birds here; and it will be

seen that, excepting the change of color again, they represent the same formed fowl from beak to toes—the true Shanghae, though ebony-hued."

Bement, in the 1863 edition of the American Poulterers' Companion, gives a variety of Shanghaes (afterwards called Cochins), Buff, Yellow, Cinnamon, White, Gray, Black and Partridge colored. Here is a mention of Black Cochins in an American work at a date prior to the first cross; and in another but a few years after that event in the Hand Book of Poultry, published by Pettingill, Bates & Co., New York, that mentions nine varieties of Cochins, Buff, Lemon, Silver, Silver Cinnamon, Cinnamon, Partridge, Grouse, Gray, White and Black.

More evidence along this line is available but enough has been cited to conclusively prove that Black Cochins were bred in America long enough before the event of the Plymouth Rock to permit of their use in the original cross.

Were Cochins and Javas the Same Fowl? — Just why there has been so much misunderstanding about this ancestry and why the Java has been so often cited as a parent of the first American breed seems strange indeed, but Mr. Nettleton drops a salient hint in his letter: "They were called by most people Black Javas, had feathered legs," etc. From this statement we may clearly deduce the fact that the terms Black Cochin and Black Java were interchangeable at that period, and of this fact it is possible to find much more evidence.

The Premium Lists of the Nashua (New Hampshire) and Philadelphia (Pennsylvania) shows for the year 1871 contain the following lines in their classification of breeds to which prizes would be awarded.

BLACK COCHINS (OR JAVAS)

This classification in this form can have but one interpretation, namely: That the two names stood for the same fowl; that they were so considered, and further, that the term Java was considered to have been incorrectly applied by the best authorities of the day is brought out by the fact that the term "Java" was dropped by the first standard makers and the term "Cochin" used. Black Cochins are described in the first standard and in every standard that has followed it, down to the present time, but Javas were not admitted and described until the 1883 edition was published.

Mr. I. K. Felch has called attention to this bit of history several times. One of his articles appeared in the Poultry Monthly,

December, 1891, in which he makes the following statements concerning the relation of Cochins, Javas and Shanghaes in general:

"In 1852 the first heavy black fowls of an Asiatic type appeared in Massachusetts as Black Javas. The females were black; some of the males were wholly black, others had mahogany-streaked necks with red mahogany round spots on the wing coverts. The Cochin Chinas, or Shanghae—they were called by both names—came to us in buff, grouse color, black-reds, the black now and then appearing. From the first trio I owned, a male, then called Black-Red, identical with Partridge Cochin male of today, a buff colored pullet, and hen buff in ground color, minutely penciled with dark brown, came black chicks, as well as some the color of Partridge, Buff, and White Cochins, which bred true to color. The first Black Cochins were a dull black. When the first American standard was made, all these Shanghaes were christened Cochins, and the Black put in the list; this ignored the Black Javas and forced them into the Cochin class. Many breeders were striving to breed them to smooth shanks, and birds were becoming more plentiful with the smooth shank. The action of the fanciers was somewhat censured for thus ignoring a breed which some claimed were older residents of the country than the Cochin. But the act pressed all the Black Asiatic blood into the class; the result was that for a while, although the Blacks were less pure in Cochin type, they were the most prolific in that they laid more and larger eggs."

From the above it appears that Black Javas were Black Cochins, according to the "Standard of Excellence," at least. It would further be a fair inference that two sorts of Black Asiatics were being developed, one with heavy leg feathering and another with less and with much lighter bodies. That those who favored no leg feathering did not perfect their ideals is apparent from the foregoing.

Several of the citations previously quoted agree upon the number of different varieties of Shanghaes or Cochins, also upon the character of each of these varieties, showing thereby that a distinct breed with many different varieties—in conformity with the modern understanding of the terms "breed" and "variety" and our conception of the distinction between the two terms—existed in those days. On the other hand, we hear of only one variety of Java in those days, the Black. Even the Mottled is not mentioned. Otherwise than through faulty nomenclature,

the Java of the early period herein alluded to leads a very doubtful existence. No definite nor authentic information for a Black Java that was distinct from the Black Cochin of the period between 1850 and 1870 can be found. Coupled with this fact, the absence of a Java in our first standard becomes significant, particularly as the first of these works was published but a decade or so after the original cross that produced the Plymouth Rock was made and so few years after this particular Java was supposed to have flourished.

Well and truly did Stoddard (1880) write: "On Black Java hens, a sort now nearly or quite unknown in this country;" and this plain admission that the dam of a great race of fowls, then rapidly becoming "if not already more commonly kept than any other race," was nearly if not quite unknown in this country, only eleven years after the race made its first public appearance and no more than fifteen probably after its creation. What could have become of it in the very few years intervening is beyond conception unless, as Mr. Felch has suggested, it was classed as a Cochin by our best standard makers, and if men of their breadth of intelligence, their long experience and reputation in the poultry world, classed them as Cochins—Cochins in reality without doubt they were—for men of the calibre of our first standard makers could not be mistaken upon a question of breed characteristics—certainly not all of them, and with the characteristics involved, those of a breed as commonly kept and understood as the Cochin.

English Opinions as to Origin.—With our own good American breeders so feverishly excited and possibly prejudiced either by their friendship for the men involved or by their opinoins of the breeds in question, or not in question, it may be somewhat refreshing to seek the opinions of those who may review the heated question in a cooler atmosphere or at a distance and surely with prejudice wholly removed. All these men had, when their opinions were expressed, made questions of poultry culture the study of rather long lives even then and, although each of them lived for years afterwards, they were not known to advance any opinion differing in any particular from those herein quoted.

Edward Brown of London, England, whose writings are familiar to many poultrymen in America and whose war-time lectures have been so well received recently (1918) in this country, wrote in 1884, under the name of Stephen Beale, in a work entitled "Profitable Poultry Keeping," page 117:

"This is a variety of New England manufacture, but is, nevertheless, a most useful breed for general purposes and has become wonderfully popular within a very short time. The fowls are cuckoo in plumage and resemble a Cochin in shape more than anything else, as that variety has doubtless had much to do in the making of them."

Harrison Weir, in the second volume of Our Poultry and All About Them, discusses the American Plymouth Rock and plainly shows that he is very much inclined to adopt a theory that our modern Plymouth Rock is but a perpetuation of the breed originated by Dr. Bennett, which all other authorities regard as extinct. By so doing he certainly leans most decidedly to the Cochin side of the controversy, as a quotation from this discussion by Mr. Weir reads:

"The Plymouth Rock fowl, then, is in reality one-half Cochin China, one-fourth fawn-colored Dorking, one-eighth Great Malay and one-eighth Wild Indian."

After quoting the vital part of the Ramsdell article in the Poultry Monthly, Weir comments rather testily: "Then a new cross between the Dominique and some Asiatics and lastly, another cross, and that with the so-called Java, of which it is said in Kerr's American edition of the Rev. E. S. Dixon's book (1860), that no such breed existed in America. * * * So much for the Java, but the origin of the Dominique thus remains unknown."

Plainly, Mr. Weir does not accept, even reluctantly, the Java as a parent of the Plymouth Rock and it seems that he may be equally skeptical concerning the Dominique parentage. Looking at the Plymouth Rock fowl from all angles and weighing all theories in the scales of probability and possibility, Mr. Weir again states:

"* * * but we are told that they are a new invention made from a cross between Dominiques and Asiatics, and which they have every appearance of."

The third eminent English authority we wish to quote is Mr. Lewis Wright. It is particularly agreeable and pleasing to American writers to find that a fellow countryman and contemporary of Mr. Weir contributes the strongest and ablest article in refutation of Mr. Weir's theory of the perpetuation of the Bennett line of Plymouth Rocks. This able and instructive

article will be appreciated thoroughly by all students of Plymouth Rock history.

"The variety now known by this name has never been correctly described in any work on poultry; all hitherto published, both in England and America, confounding it with a creation of Dr. Bennett's some twenty years ago, and described by him in his well known American work on fowls. This description is highly curious and well illustrates our opening remarks on some American so-called 'breeds.' 'I have given this name,' he says, 'to a very extra breed of fowls, which I produced by crossing a Cochin China cockerel with a hen that was herself a cross between the Fawn-colored Dorking, the Great Malay and the Wild Indian. Her weight is six pounds seven ounces. The Plymouth Rock fowl, then, is really one-half Cochin, one-fourth Fawn-colored Dorking, one-eighth Great Malay and one-eighth Indian. Their plumage is rich and variegated, the cocks usually red and speckled, and the pullets darkish brown. They are very fine fleshed and early fit for the table. Their legs are large and usually blue or green, but occasionally yellow or white, generally having five toes upon each foot; some have the legs feathered, but this is not usual.'

"It is only necessary to read the above description to see that this extra breed of fowls, which bred legs yellow, white, blue-green, feathered or clean, five-toed or four-toed, could not possibly last long. It was too 'extra' for this world and even the inventor could not 'run the machine' long, so complicated was it in its various parts. **This** Plymouth Rock, then, naturally and inevitably disappeared from simple disintegration of its heterogeneous materials, and though Dr. Bennett's old description has been copied by all poultry authors who have noticed the fowl up to the present date, this has arisen from ignorance, first of the fowl itself and, secondly, of the accounts given by its breeders and producers. So completely had the old Plymouth Rock disappeared, that in the first poultry journal ever published in America, the New York Poultry Bulletin, no notice whatever is taken of any fowl under that name during the first two years of its issue. The description in the American 'Standard of Excellence,' published in 1871, states the color as dark or light steel-grey for cocks, and dark steel-mottled black and white, black and white bars well defined across each feather, for the hens. This is evidently intended to describe Dominique marking, and indeed the editor adds a remark in brackets that he con-

siders it wrong, and that the plumage should be described 'same as Dominiques,' but in any case it widely differs from Dr. Bennett's, and accordingly, by degrees, a totally different account of the origin of the breed begins to appear. The first authentic account we were able to obtain came to us in answer to a special inquiry in a letter from Mr. W. Simpson, Jr., of West Farms, New York, dated August 12, 1871. In this letter he says of them: 'If bred with care, they will make a fine variety. They are an **Improved Dominique,** being just like them except in comb and size; they have a single comb and are larger, as they have a touch of Asiatic in them.' He adds: 'They do not breed very straight yet.' In another letter dated April 26, 1873, enclosing the revised and corrected 'Standard of Excellence' for the variety, which will be found at the end, and which, after careful study of the bird, we have also followed in our own schedule for judging the fowl (no alteration being made further than to rearrange the various points in the order adopted after full consideration throughout this work), the same gentleman adds the following particulars, first premising that the 'already printed Standard is very incorrect, particularly in color of plumage and tail.' He then proceeds as follows:

"'After a little careful breeding I think the Plymouth Rock will be a grand fowl and second to none for all purposes. As yet they **do not breed quite true** always and their eggs are all colors and sizes. They are handsome, good setters, and good for table, and I intend myself to stick to them and try and get them right. They were produced from single-combed Dominiques crossed with Asiatics. Dominique fowls are the same in color, and are a useful variety; but twenty years ago when the Shanghaes made their appearance, these took their place in the estimation of the public, and the Dominiques were much neglected by fanciers, so that they do not breed any straighter now than the Plymouth Rocks.'"

Referring to the article by Rev. H. S. Ramsdell in the Poultry, Pigeon and Pet Stock Bulletin, March, 1873, already quoted, Mr. Wright comments:

"The Black Java fowl referred to in the above extract is evidently an Asiatic bird (either pure or cross-bred), containing a great deal of the Malay. We have made inquiries of other American sources and, while some affirm the Cochin cross to have been employed, every correspondent, without exception,

states that one of the parents was the Dominique fowl. Our own strong opinion is that the Dominique and also the Asiatic races being very common in America, many cases of crossing have occurred, and that thus the same fowl—half Asiatic and half Dominique—probably has been produced in various quarters, and not in any one alone; but, however this may be, the facts of Dr. Bennett's birds being extinct, and that the modern fowl was originally a half-bred Dominique, are absolutely certain.

"Only one or two importations of Plymouth Rocks have yet reached this country; one of which, sent over by Mr. W. Simpson, arrived for the Birmingham Show of November, 1872, and took honors in the 'Any Variety' class. The variety, as now brought to something like perfection, almost precisely resembles a Cuckoo Cochin with smooth legs, but has a considerably larger tail and a very full and prominent breast, derived from the Dominique ancestry. The head and comb are unmistakably Cochin. As regards the flesh, the Dominique seems to predominate, the fowl being juicy and good for the table. It is a moderate setter, about equal to average Brahmas as regards to frequency of incubation; grows fast and is a capital layer. In all its economic qualities, in fact, it very closely resembles the Brahma and even its habits, being an active forager; but does not generally stay up nearly so late from roost. The color being well adapted for wear, we must pronounce the Plymouth Rock a capital fowl, giving all the good qualities of the Cochin without its principal drawbacks, and likely to suit the many who desire a large, noble-looking bird, but whose taste does not incline to the feathered legs and fluffy proportions of the Asiatics, and who dread the delicacy of the Dorking.

"In breeding this fowl, as in all others of cuckoo color, the chief point is to preserve the pure, bluish-gray and carefully to avoid pure white, black or especially red feathers. Some little uncertainty in this respect will be found at first in all imported birds, but by care in choosing breeding-stock from the progeny, may readily be checked, as no color is easier to breed 'true' than this Dominique marking, with a little judicious selection. The combs will require the same careful breeding and the same precautions against premature showing, which we have already treated of in Cochins."

The reader will notice, doubtless, that while Mr. Wright gives equal prominence to the Cochin and Java theories of origin, he frequently indulges in comparison of the Plymouth Rock with

the Cochin—always with the Cochin, but not once with the Java. Evidently, the early Java is a bird with which he is not familiar and, therefore, has no reason for discussing it. His only comment on the Java is: "The Black Java fowl referred to in the above extract (Ramsdell's article), is evidently an Asiatic bird (either pure or cross-bred) containing a great deal of Malay."

Mr. Wright's position upon this is not quite clear to American poultrymen, but the statement justifies the comment that the Java is a fowl evidently unknown to him. To quote Mr. Wright once more: "We have made inquiries of other American sources; and while some affirm the Cochin cross to have been employed, every correspondent, without exception, states that one of the parents was the Dominique fowl."

After a mention of the English importations from America, note that Mr. Wright describes our American Plymouth Rocks in this language: "The variety is now brought to something like perfection—almost precisely resembles a Cuckoo Cochin with smooth legs. * * * In all its economic qualities it closely resembles the Brahma, etc.—a capital fowl, giving all the good qualities of the Cochin without its principal drawbacks—the combs will require the same careful breeding and the same precautions against premature showing, which we have already treated of in Cochins."

From what does the Plymouth Rock acquire these Cochin characteristics if not from the Cochin? If from the Java, must not the Java have been a Cochin?

Apply, if you please, the fact suggested by Mr. Wright's line of reasoning in the sentence: "Our own strong opinion is—Plymouth Rocks, Danver Whites and nearly, if not all, American breeds also owe much to a Cochin cross."

We are told by several of the writers of the period which followed closely the appearance of the Plymouth Rock, that several origins were probable. What do we find the origin to be in these instances? The component parts of other strains? According to all prescribed accounts, Cochin or Brahmas with the Dominique. The Drake strain was the best known of those that were developed by crossing year after year, and we have corroboratory evidence that Drake used Dominique or hawk-colored hens and an Asiatic male. His own statement which, according to

Bishop, was made to Mark Pitman and V. C. Gilman, covers this point with an out and out plain statement of fact:

"Being out of health, I engaged in the business of picking up fowls about the country for market purposes. Coming across a lot of hawk-colored pullets, I was so pleased with them that instead of butchering, I bred them to an available Asiatic grade."

Other authorities mention White Cochins and Light Brahmas as the probable source of Asiatic blood in the Drake strain because of their presence on the premises. Mr. Felch names Dark Brahma. Whether Mr. Felch saw the evidence or drew conclusion after observing the result of Drake's crosses, we do not know. It would not be strange, of course, if the "available Asiatic grade" of Mr. Drake's was the "Dark Brahma" of Mr. Felch's—as a grade with Asiatic blood might easily resemble the Dark Brahma.

We see in the above no sign of a "Java," and this case is like all others, so far as we are supplied with accounts. Those who attempted to copy the fowls that Upham introduced and found popular and profitable to breed, invariably, as far as we are acquainted with the facts, used Asiatic of one kind and another, but no Java blood, with Dominique. These results were, many of them at least, successful. That is, these crosses produced a fowl that so closely resembled the color and type of the ones that Spaulding, Ramsdell and Upham were producing, that they competed with them for public favor. This fact, in itself, is the strongest corroboratory evidence in favor of the claim of Cochin parentage.

Bishop's Opinion and the Reasons for It.—Furthermore, the Rev. Mr. Bishop, who evidently gave this question much study and who was editor of that Journal at the time Ramsdell's article was published in the New York Poultry, Pigeon and Pet Stock Bulletin, later in an article published in Farm Poultry, year 1901, repudiated the Java claim, writing that upon his return (from New York) to his old habitations, he became convinced that such claim was not justified by facts. In his pamphlet, "Development of the Plymouth Rock," Bishop makes the following pertinent remarks:

"The Drake Strain, i. e., the 'Norfolk,' never had any mixture of Java blood;" which statement agrees with the foregoing.

Again, we find this statement: "Those who obtained their birds from the Spaulding stock direct, never had any Java blood.

Of these were Mr. Ramsdell, Mr. Corbett, and many others. The stock was widely diffused, entirely outside of the birds that Mr. Upham manipulated. **Spaulding never owned a real Java, whatever they may have called a Java. . . .**"

This certainly vitally affects the controversy, if true, and it would seem that the Rev. Mr. Bishop from his location in the center of the culture of early Plymouth Rocks and by his associations with so many of the early breeders, was in a position to become acquainted with the facts, if a writer ever was; furthermore, his experience with fowls, his writings and his former position as editor of the Poultry, Pigeon and Pet Stock Bulletin, all indicate that he must have possessed the attainments to qualify him as an authority whose judgment can be absolutely relied upon.

Bishop goes a step further and eliminates the "Java" from the Gilman and Pitman stock as well as from the Spaulding, Ramsdell and Drake.

The crucial point in the controversy is and always has been whether Spaulding used a Black Cochin or a Black Java. Bishop evidently bases the opinions just quoted upon the facts as he records them in the following quotations from his work:

"So far as I can determine, whatever fowls the Spauldings had in their yards, or whtaever they may have called a Java, the influence of that so-called or believed to be Java was purely imaginary. The Java was a clean legged bird. The chicks hatched from Mr. Spaulding's yard were anything but that, and those feathered legs came neither from the Javas nor the Dominiques.

"Marcus F. Town of Thompson, Connecticut, with a ten years' knowledge of whatever points the so-called original Plymouth Rocks bore with them, writing in 1876, declares: 'The chickens of my pair' (purchased of Spaulding) 'were many of them heavily feathered on legs. Next year with a better mating for color, there were some feather-legged.'

"W. H. Todd of Ohio sets forth the statement in one of his publications that at that time the best would throw some feather legged chicks.

"Indeed, so prevalent was this mark of an Asiatic infusion, which could not have been from the Java, that we find Mr. C. C. Corbett, who got out the first print of the Plymouth Rock (Figure 8) that was ever made, and who went all through the question as to their origination, writing to the Poultry World in April, 1873, to ask: 'Have you any knowledge of a stock of

Plymouth Rock fowls that do not occasionally throw feather-legged chicks?' It is surprising that Mr. Corbett, getting his birds from the Spaulding stock, through Mr. Ramsdell, should have struck so early as this, etc.'"

Mark Pitman's Opinion.—Mark Pitman also told the writer verbally that all the trios that Upham showed at Worcester in 1869 wore feathers on the shanks, some more and some less. This feature, however, might be attributed to the cock bird of Burnham's blood which, according to Upham's accounts, was bred for one year in Upham's yards. Here, however, we find three instances of the Spaulding stock which was not subjected to that influence, showing a most decided tendency to show feathered shanks. This tendency must have been due to the influence of the Dominique or the Black Asiatic. This fault of feathered shanks certainly should not be charged against the Dominique; therefore, it must be charged against the Black Asiatic. That being the case, what breed other than a Cochin could the Black Asiatic have been? For, according to all our descriptions, a feather-legged Black Java is just what the first standard makers called it—a Black Cochin.

The Modern Java.—The modern Java is of later development and was recognized as a standard breed in 1883. Its origin is undoubtedly the same as the Plymouth Rock and has been called a Black Plymouth Rock. The book describing Plymouth Rocks about 1880 gives the information that black females often occur, and we obtain information of the same character from Ramsdell's article, Upham and others. Such being the case, it is plain that black males could have been produced by repeated selection or by crossing with the Spanish or some black variety.

The points of this Java-Cochin controversy have been presented fully because it seems encumbent upon a treatise of this nature to present the facts as far as they can be ascertained and the opinions of those who had the best opportunities to observe and gain a knowledge of the facts as nearly first-handed as possible and who were the most competent to judge. D. A. Upham and Mark Pitman, of all men living in 1900 and 1901, seemed to be those men, and as their accounts, though verbal for the most part, but related many miles apart and obviously at different times, coinciding in every essential detail, practically put the writer's mind at rest on this much mooted question. Upham, though well along in years at the time, was vigorous physically as well as mentally and most positive as to the facts as related.

Of the truth of the statement in this previous sentence, the following letter, which was written to the writer January 1, 1900, will prove convincing:

Wilsonville, Conn., 1-1-'00.

Friend Smith:

Replying to your favor received. I received two copies of Farm Poultry, one containing your articles and one of Mr. ————, who is way off on his statement. If he is correct, where did the progeny of Mr. Spaulding get their feathered legs if crossed with Black Javas as ———— claims. Javas were smooth-legged fowls, no feathers, black in color or very dark slate color and bottom of feet VERY yellow, and everybody knows that the Barred Plymouth Rocks (or ought to know) had more or less feathers on legs for four or five years from first cross made by Spaulding, who never bred them only for poultry and eggs with all kinds of barnyard fowls. I bought my birds the second year that Mr. Spaulding bred them. Bought the cock that Spaulding bred as a cockerel and two hens. Those three birds were the progeny of Spaulding's single comb old-fashioned hawk colored cock bred to two or three black Cochin hens had of David Clark of Woodstock, Conn., a fact I know from Spaulding's and Clark's sayings to me when I bought my birds, and the hens ALL had heavy feathered legs. The trio I bought had feathers on legs. Mark Pitman knows it to be a fact as he saw the old trio at Worcester when I sold to C. Carol Loring, also Gilman of Nashua, N. H., knows that they bred feathers on legs more or less for years.

My birds all bred single combs, both sexes, NOT ONE did I ever have come rose comb and for two years my chicks came with more or less feathers on legs—some with very few and half or more showing feathers to a considerable extent.

D. A. UPHAM.

That Mark Pitman approved of the account of the origin as written by Bishop will be clearly proved by the following self-explanatory letter:

79 Thurston Street, Somerville, Mass.

Mr. Smith.

Dear Sir: Your letter came to me where I have been living for nearly seven years. I have been giving away poultry matter for the past ten years.

I think the last I gave to Mr. Atherton, the proprietor of the Stock Keeper, printed in Boston.

Among that was a history of the Plymouth Rock by the Rev. M. Bishop, an Episcopal minister living in Connecticut. That history was accredited by Mr. Upham and myself, which you can call upon Mr. Atherton and get, which will give you the dates asked for.

I never crossed the strain since I began breeding them until years after I sold Mr. Felch the lot I had remaining.

That history of Mr. Bishop will be very useful to you, as he gave the first history of the Plymouth Rocks.

The Essex strain, which I had from the beginning, were bred in and in four, five or six years—being noted for the time as the Essex County Strain, the particulars of which no man can give you as good an account as myself, which I will do if you will call upon me.

Let me suggest to you to take an early train some morning, call upon Mr. Atherton, get the book, then take Electric Winter Hill car in Boston, which takes you directly to Thurston Street, where I shall be happy to see you at any time and give you my remembrance of all you wish to know.

I am at home always as I have been an invalid many months and not able to go out, and shall be happy to make your acquaintance.

Very sincerely,

MARK PITMAN.

June the tenth, nineteen hundred.
Per N. W. P.

THE MALE PARENT

Fortunately, for the reader, the male parentage is not so uncertain. As Lewis Wright states: "All agree that one of the parents was the Dominique fowl." All our American accounts state that the male parent of Spaulding's cross was a Dominique. Furthermore, it seems agreed that all who attempted to create a fowl after the pattern of the Spaulding stock, whatever else they used, always used a Dominique male. This seems to be universally true, except in the case of the Drake crosses. Drake states: "Coming across a lot of 'hawk-colored pullets' I was so pleased with them that instead of butchering I bred them with an available Asiatic grade." The term "hawk-colored" used by Mr. Drake was one that was in common use among the breeders of Massachusetts and Connecticut, for which reason the writer reluctantly applies the term "Dominique" which others have been so ready to do, because the Dominique of today has a rose-comb, while the fowl used in this original cross had, according to all accounts, a single comb, though it is related that some of them had rose-combs even in those days. The term "Dominiques," though, gives the impression of a rose-comb fowl to nearly every reader, but let it be understood that the term "Dominique" as applied to the male parent in the Spaulding cross was a single-comb bird and of an unknown origin. That there should be so much disagreement in regard to the character of the female and

such thorough accord with respect to the identity and character of the male parent is certainly remarkably singular, to say the least, but the matter is surely beyond explanation now unless the following facts offer the solution of the riddle.

Little or nothing is known of the origin of the Dominique and in this fact, perhaps, lies the explanation of thorough agreement of all our historians on all questions involving that race. Some accounts of the early days of these fowls have been written and some theories regarding their origin advanced, but as to the latter, nothing that professes to be tangible has been preserved if, indeed, it ever existed. That they must have been very long known is evident, as a fairly extended account is printed in Dr. Bennett's Poultry Book, 1850. This account seems to be the foundation for all those published for many years afterward. With this account we find illustrations of the birds of George C. Pierce and Stephen Osborn, Jr., of Danvers, also a statement of costs of keeping and returns for eggs from thirty-eight fowls and the number of eggs obtained from them during the months of December, 1848, and January, February and March, 1849, which shows a net profit and labor income of $24.83, which bears out the statements often made that "They are first-rate layers." "They are said to be from the Island of Dominca, but I very much doubt it!" This statement seems to be accompanied by no more proof than appears in the similarity of names.

The claim of an English writer that Dominiques are the result of crossing Scotch Greys with Dorkings is certainly within reason. Other writers have noticed the similarity between Dorkings and Dominiques. Bement in the American Poulterer's Companion, pages 121 and 122, writes as follows:

DOMINIQUE FOWL

"This well-known variety of our domestic fowl, there is good reason to believe, is old and distinct, though it is generally looked upon as a mere 'farm-yard fowl'; that is, the accidental result of promiscuous crossing; but there are several forms among the farm-yard fowls, so-called, that are seen to be repeated generation after generation, the counterparts of which are to be met with, scattered here and there, over this country. So constant repetition of corresponding features would seem to declare that there are several unnoticed and undistinguished varieties of fowls which deserve to be regarded and treated as we do other distinct varieties.

"The Dominique fowl, well selected and carefully bred, is a fine and useful bird. They are distinguished as Dominique by their markings and their color, which is generally considered as indication of hardiness and fecundity. They are by some called 'Hawk-colored fowls,' from their strong resemblance in color to the birds of that name. In England they are usually called 'Cuckoo fowls,' from the fancied resemblance of their plumage to the feathers on the cuckoo's breast. We seldom see bad hens of this variety, and, take them 'all-in-all,' we do not hesitate in pronouncing them **one** of the **best** and most profitable fowls, being hardy, good layers, careful nurses, and affording excellent eggs and first quality of flesh.

"In any close grouping of the breeds of poultry, the Dominique fowl might perhaps be safely referred to the Dorkings. Some of the slate-colored, barred Dorkings are scarcely distinguished from them, except by the fifth toe; still there is something very permanent and remarkable in the peculiar style of plumage that ought not to be lost sight of. It is with difficulty got rid of by crossing. Half-bred Spanish and Dorking fowls have quite retained the barred and shaded feathers of the one parent, displaying the comb, ear-lobe and stature of the other. And this curious and decided plumage is quite confined to one or two breeds, never appearing, that we are aware, in others, such as the Game, the Malays, and the Hamburgs; a circumstance which makes us believe it to indicate an ancient descent from some peculiar and original parentage.

"The prevailing and true color of the Dominique fowl is a light ground, undulated and softly shaded with a slaty-blue all over the body, as indicated in the portrait of the cock, forming bands of various widths. In order to be more fully and better understood, and to show the peculiar markings of the feathers, we procured a feather from one of the hens, which is faithfully delineated on the opposite page. The comb of the cock is variable, some being single, while others are double—most, however, are single; the iris, bright orange; feet and legs light flesh color—some, however, are of a bright yellow or buff color; bill the same color as the legs.

"The hens are not large, but plump and full breasted. The cocks are somewhat larger than the hens, some approaching the smaller sized Dorkings in weight. The chickens at two or three months old exhibit the barred plumage even more perfectly than the full-grown birds.

In the foregoing, Bement either accepts the English writer's viewpoint or from his own observations has come to the same conclusions. The similarity to the Dorkings is brought to the reader's attention and the possibilities of a Spanish-Dorking cross as the possible source of origin is intimated.

The Rev. D. D. Bishop, whose work is heretofore several times referred to, and is very thoughtful throughout, presents a theory of origin that is not merely possible, but quite probable. On pages 5 and 6 we find related a seemingly natural method of origin, the truth of which is not at all unlikely, hence we reprint:

"That the bird known by the name of Plymouth Rock should have made its appearance about that time, 1866 to 1870, was inevitable.

"The conditions were favorable. It was at the time of reaction from the furore for simply big birds, when farmer folk were discussing among themselves the failure of the mammoth Asiatics to fill the bill for both eggs and marketing. They consumed both too much time and feed in their growth. They failed as foragers for want of activity. They were the reverse of precocious in their development. The old-fashioned dunghill was too small. There was equal dissatisfaction with both.

"The first result was the throwing of whatever Asiatic came to hand—Shanghaes, Brahmas, Cochins—what not—at random into the barnyard flocks, to mix indiscriminately with a lot of birds that had suffered that kind of breeding, if that could be called breeding, for a generation or more.

"The next step in the process was that the more thoughtful or fanciful began to pick out the colors that suited their individual notions. Various farmers had local reputations for the excellence of their white hens, or red hens, or whatever color they might have chosen.

"Perhaps the most widely diffused of what might have been called a native stock was even then known as 'old-fashioned,' 'hawk-colored' fowls. Their dispersion over a wide extent of country was brought about by two causes. First, their markings were much more distinct and uniform than any of the mixed colors, so that by original vital strength the color was carried wherever a drop of the blood found its way. Secondly, they proved to be hardy, matured rapidly and so came quickly to usefulness as broilers, egg producers or for marketing purposes.

They were not so much exposed to the ravages of hawks, and farmers thought much of that. The hawk could not see them so plainly, and the mother hen was almost as sharp of eye as her enemy in the air.

"Another point should not be overlooked, namely, the facility which was manifested by this stock to assimilate the dash of Asiatic blood so as to make it a genuine infusion. In other words, the cross by Asiatics made 'a hit' upon the said old-fashioned, hawk-colored birds, so that they reproduced themselves, throwing comparatively few reverts, and furnishing at once the basis upon which to build a breed."

That the natural course of events following the general disappointment in the large Asiatic fowl was to throw them into the scrap heap in the nature of the mongrel farm yard flock cannot be questioned. There could be no other place found for them unless it be the butcher's cart and all Asiatics would be no more likely to be thus condemned than all mongrels. Many mongrels survived, so did many Asiatics.

It must be remembered that this was a time when fowls were expected to shift for themselves and pick up a living. It was before the days of henhouses and discussions as to glass fronts, open sheds and southern exposures. A clump of trees, a cluster of bushes, or some nook among a group of farm buildings was all the shelter furnished. Under such conditions the ancestors of Plymouth Rocks learned to thrive. It was a game in which the survival of the fittest played the all-important part and won. These conditions lasting for generation after generation, together with the infusions of foreign blood that have been from time to time introduced, account for the hardy character of this fowl.

Through some process hawk-colored fowls came into existence. How, no one can definitely say, but it is more probable that this was a process of reincarnation rather than one of mixing two-color types of plumage, creating a third and entirely different color type. This line of reasoning fits in well with the theory of a foundation of Scotch-Grey blood which, as one author, Mr. F. L. Sewell, puts it, "The Scotch-Grey fowls of North Britain can perhaps throw some light on the origin of the American Dominique. If this very old race of 'Cuckoo-colored' chickens are not the ancestors of our early Dominiques, we must confess that we have as yet failed to discover them. They are the nearest to the type of our old Dominique of any European race of fowl."

Such, then, is the parentage of the two component races that were successfully amalgamated to create a third race, which proved to be epoch-making, for by its creation poultry culture ceased to be the one-feature possibility that it had always been and became at once a full and well-rounded enterprise with commercial and economic possibilities. In other words, the poultrymen had found their Rosetta stone, the poultry business its Fountain of Eternal Youth.

THE EARLY DAYS OF THE NEW BREED

The reception that these fowls were accorded was startling. Entered and exhibited as a novelty at the most they became the chief attraction of the show. Other exhibits were little more than noticed. The idea of an American fowl appealed to the rank and file of American poultrymen. An introduction to poultrydom was all that was necessary to establish the position of Plymouth Rocks among American poultrymen. The long looked for dual purpose fowl, occupying the middle ground between the slowly maturing and heavy Asiatic and early maturing but light Mediterraneans, had arrived and the warmth of their welcome exceeded in degree the eagerness with which a fowl that would excel in egg producing and flesh producing qualities had been sought.

The experts examined them minutely and discussed their merits and demerits most profoundly. They prophesied futures according to their individual views. That their views differed widely would not excite amusement even in this day after years of popular approval. They, in part, undoubtedly deserved the epitaph bestowed upon them by one noted authority, who pronounced them d—d mongrels, which appellation needs but a slight alteration to become "The Great American Mongrel," by which unique and expressive title they soon became known. The opinion implied by the term applied at the time by the one expert was not that of all, however. Mark Pitman, for many years one of the most experienced and appreciative of poultry fanciers, thought so much of them that he purchased one of the trios exhibited for his patron, C. Carol Loring, of Boston and Dedham, Massachusetts, who, like Mr. Pitman, was for a lifetime an ardent admirer of beautiful fowls of many breeds and varieties. One, too, was sold to Captain Evans of Manchester, New Hamp-

shire. Mr. Upham sold over one hundred settings of eggs during this show. When faced by these facts it is apparent that Plymouth Rocks won public approval almost instantly. With the poultry interested public, it was and henceforth has been a case of love at first sight. Mr. Upham was astounded at the price he found customers willing to pay for an unheard-of mongrel, as two dollars per setting was the price at which he sold the eggs, though he was obliged to return much of it because orders were more numerous than eggs the following season.

Mr. Upham could not sell his birds and maintain a monopoly at one and the same time. Besides, new strains of like or similar fowls might have been created had he not sold. No doubt many "original" imitations did materialize as it was. In fact, we have more than one clear and authentic account of one strain, so created, that obtained considerable prominence. Several strains soon developed. Besides the Upham, there were the Ramsdell, the Drake, the Gilman and the Essex County, later the Essex. We should not quite yet count out the Spaulding strain, for many still procured birds from that source.

The Spaulding Strain.—We know that the Spauldings continued breeding these birds for some years because we find references of this one or that one having procured their birds from them; as "such a strain is largely of Spaulding's stock, etc." Upham and Bishop tell us that the Spauldings bred largely for eggs as a commercial commodity. From the lack of information to the contrary it seems probable that they continued breeding the progeny of the original cross. They had, at the smallest calculations, the intense satisfaction of having laid the foundation for a structure that would endure as the best of its kind for generations and of having those progressive pioneers, Upham and Ramsdell, start with their original stock.

The Upham Strain.—Mr. Upham maintained a supremacy of quality in Plymouth Rocks for a number of years. Of this strain, Mark Pitman said: "About everything that was good in these times came from Upham." Such tribute coming from a successful contemporary is as much as need be spoken or written of the quality of Mr. Upham's Plymouth Rocks. Mr. Upham relates that he had no particular hobby. The poultry business was a considerable item in his business transactions. His aim was to produce a taking fowl. Such a fowl must have size and distinct markings. In that stage of development males and females of anything like the same shade were rarely, if ever,

produced. As Mr. Upham has told us, most of the females of the first cross were black and only a few were gray, or steel-colored, to use Mr. Upham's term. Males that showed color enough to give any character to their plumage were almost as scarce. Mr. Upham's particular desire was to produce the steel-colored females, as most of them seemed to come very dark and even black. He, like others, soon realized that his task was to produce males and females of the same shade of color. Even the breeders of the present day have found that only by the most persistent and painstaking efforts can this be accomplished, and they have also the advantages accruing from the inheritance of years of breeding for that particular character.

Aside from such very fundamental qualities as size, shape, health, vigor and the like, this requirement that males and females should be of the same shade of color became predominant very early in the life of the breed and has remained so; and while that fact may have been lost sight of in comparatively recent years, it is merely because of its correspondingly perfect accomplishment. Failure to comply with this demand will at any period before long result in agitation for its enforcement.

"Males and females must match in the show pen" became the slogan most often repeated very soon after the breeding of Plymouth Rocks became general. Results came slowly at first because the breeding of Dominique color was not understood. To accomplish this most difficult task, breeders studied, experimented, and observed. To accomplish this, systems then new were discovered, among them, single matings, intermediate matings, extreme matings, double and special matings. All these systems of matings except the first, were thought out originally and practiced primarily to produce both sexes of Plymouth Rocks of the same shade. The application of these principles to obtain other objects in Plymouth Rocks and to the breeding of other breeds and varieties came about later. The great, all-absorbing desire to match the color in male and female Plymouth Rocks was the incentive which led to their discovery.

The Ramsdell Strain.—This was one of the earliest strains and because of the time of its beginning and the source of origin was more nearly contemporary with the Upham strain than any of the other early strains. Also, because of its location it was for a time more of a rival. The source of his stock was undoubtedly Spaulding, as Mr. Ramsdell writes " . . . . which is situated about a mile from my own. I was intimately

acquainted with Mr. S——." Taking that statement as a fact, it was natural for Mr. Ramsdell or any one that was fond of fowls to try out some of this new cross. We find no record of Mr. Ramsdell exhibiting very often, but we do see accounts of his selling birds, which indicates that he was a factor in the development of the breed, but putting the two facts together it seems not improbable that he was like Spaulding particularly interested in the commercial side of poultry culture, though on a smaller scale, Mr. Ramsdell being a clergyman.

The Drake Strain.—Forced by the circumstance of poor health, it was necessary for the originator of this strain to make his living from his sales of poultry, to sell his creations rather than buy the creations of others; especially, as fashionable novelties in poultry, as in every other product, usually command prices which it is to one advantage to receive rather than to give. Drake strove to breed and rear specimens that could compete successfully for the remunerative business that fell to Upham, Ramsdell and Spaulding. The purchase of a large number of birds was out of the question; a few would not produce sufficient numbers; certainly it was not necessary to purchase if he could devise a plan of breeding with results that were apparently the same. This, we judge from all available accounts, he was able to do. Some years ago the writer obtained from Mark Pitman an account of his visit to Mr. Drake's place. Mr. Pitman said: "We saw no Plymouth Rocks at all; we did see hawk-colored fowls, White Cochins and Light Brahmas.—It was late in the Fall, and as all we saw were old fowl, we concluded that the Hawk-colored fowl, crossed with Light Brahmas or White Cochin, were the parents of Drake's Plymouth Rocks. This view of the question coincides very well with that taken by Mr. V. C. Gilman of Nashua, N. H., whose early stock was largely of the Drake strain. Mr. Gilman relates that he became acquainted with Mr. Drake and found him an intelligent and honorable gentleman of delicate health, but a thorough fancier. He never volunteered information as to how he came into possession of his first stock that Mr. Gilman remembered. Mr. Gilman relates further that he was told by a neighbor while he was there that Drake started his strain with Hawk-colored hens and an Asiatic male bird. This statement Mr. Gilman apparently credited, as he says: "I know it was a feature in his breeding to produce male birds after the Brahma style." From the foregoing there appears little reason to doubt that Mr. Drake did produce Plymouth Rocks by crossing the Hawk-colored fowl, or Dominique,

reader, if you like, with Light Brahmas and White Cochins, not exactly as Mr. Spaulding produced his strain, but very similarly, as it is still a cross of Hawk-colored fowl and Asiatic. From this fact, that his stock gave excellent satisfaction, certainly as far as we can learn, it is fair to assume that it must have progressed beyond the stage of a first cross, otherwise it would have been unreliable in other hands. This does not seem to have been the case. Besides Mr. Gilman, William Haywood bred the Drake strain for a number of years with good results, and is said to have been a better and more careful breeder than the originator of the strain. Not many years ago, a number of breeders who remembered the Drake stock could be found and some of them had this blood in their stock. They describe the Drake birds as very large, very dark, and very much inclined to feathers or stubs on their shanks and toes.

Despite this affliction, Mr. Drake was quite successful in building up a strain of Plymouth Rock that was both meritorious and popular. Had he not been entirely dependent upon the poultry business for support, besides being afflicted with delicate health, his success would undoubtedly have been even more marked.

The Gilman Strain.—From an early circular, distributed by Mr. Gilman, we quote the following, which will give a very clear idea of the status of Plymouth Rocks at that time:

"My first purchase of these fowls, Plymouth Rocks, was based on fancy alone. I saw them and they pleased me at once, and I bought and bred them beside my Dominiques and Hamburgs.

"As a breed they were comparatively unknown, although Mr. Upham had exhibited specimens at the exhibition of the N. E. Poultry Club, at Worcester, a year or two before.

"I could learn nothing of the pedigree of my first purchase, whether Drake or Upham or neither, but by reason of their good behavior, they soon became the favorites of my poultry yards and I disposed of all others and made them a specialty.

"In 1872 I bought a fine pair of my own selection of Mr. Drake, paying him $20.00, a high price at that time. I registered the male bird in the Poultry World Pedigree Record as 'Champion,' 854.

"I also procured a fine, light-colored cockerel of what was then known as Ramsdell's strain. I mated these males with specimens bred from my first purchase. The result presented quite a diversity in form, color and markings. Proper selections and matings made speedy improvement, for the breed was in a formative state, and like clay in the hands of the potter.

"Still the shape was not entirely satisfactory. Mr. Drake's principle in breeding them, if I interpreted it correctly, was to produce hens of Cochin form and cock of Brahma form, thus perpetuating a disparity in shape between the sexes, which did not commend itself to my judgment. To overcome this tendency in his strain, I procured some of the 'Essex Co.' strain, which was bred so successfully by Mr. Mark Pitman, and by the introduction of this last factor to my already improved form, I have solved the problem of shape and size of the Plymouth Rock to my own satisfaction, and their growing popularity, I think, warrants me in believing to the satisfaction also of the host of admirers of this very valuable breed."

The Essex County Strain.—This was originated by Mark Pitman of Salem, Mass., who had been for several years well known for his interest and achievements in the poultry world. The same Mark Pitman, who so quickly recognized the possibilities of the new variety that he purchased one of the trios and turned it over to C. Carol Loring, heretofore mentioned, who was very much interested in poultry and who has remained so all his life, took up the breeding of the new fowls, the merits of which he was one of the first among experienced breeders to acknowledge. From the very beginning he began to develop a strain, the individuals of which conformed to certain well-defined ideas of the originator which were somewhat advanced for those days. Mr. Pitman did not look at the plumage of the Barred Plymouth Rock as a unit. In other words, he saw more than a gray fowl or a gray chicken. He analyzed the plumage of each feather and studied carefully the effects of different shades of both the light and dark bars, for he early found that a Plymouth Rock needed bars to be attractive. He soon decided that as far as he was concerned those birds that showed the greatest contrast between the light and dark bars were the most handsome birds. Less importance was attached to the "blue" haze, that the plumage of many specimens displayed in certain light reflections and which so many breeders laid so much stress upon and some do even to this day, by Mr. Pitman than to clear and

well-defined bars, such as sharply contrasting colors develop. Though he did not neglect other qualities, as he was too keen and too experienced a fancier for that, Mr. Pitman probably did make a greater effort to produce attractive plumage than any breeder who was contemporary with him.

In this undertaking we assume Mr. Pitman was successful because the strain soon became known as one that was very strong in color. From which fact we learn that the early breeders had not become able to distinguish between color and barring or to understand just how it was that the individual specimens of the Essex County strain, as it was known then, excelled in color.

Mr. Pitman secured his stock by purchase from two persons. One was a Mr. Lord, who had secured a trio of Mr. Upham through O. M. Ives of Salem. Mr. Lord bred from one of the two females only. From Mr. Lord, Mr. Pitman secured five pullets and a cockerel. Another pullet was procured from Mr. Loring. This was from the two bought of Mr. Upham. All the Pitman birds were then of the Upham strain. To these birds Mr. Pitman pays the following tribute: "Had not the pair which Mr. Lord bred from been so nice, or had not the five pullets I secured from him been so excellent, undoubtedly I would not have obtained the uniformity in my flock that I did." In making this remark Mr. Pitman clearly shows that he understood principles of selection and line breeding, so much relied upon at the present time and supposed to be a step in advance of the ordinary breeder even of the present day. Of the Upham pair which Lord bred from he had, years afterward, a keen recollection. The birds he praised enthusiastically. The cockerel, in particular, left a picture in his mind that age did not fade nor time erase.

Mr. Pitman had undoubtedly had more experience in breeding, judging and handling high class fancy poultry than any of the breeders of Plymouth Rocks up to that time and long afterwards. It is to be regretted that circumstances compelled him to dispose of his flock, though fortunately it fell into the best of hands. It is the writer's recollection that it was a contract for lighting, at or during the Philadelphia Centennial, that compelled him to sojourn for a year in that city. For this reason he felt compelled to dispose of his flock which then, in 1876, came into the hands of Mr. I. K. Felch, of Natick, Massachusetts, recently deceased, and who is often referred to as one of the foremost

poultrymen of his genertaion. Soon afterwards they became known simply as the Essex strain and by that name they have been known ever since.

The Essex Strain.—This, as stated above, was applied by Mr. Felch. The best of the Pitman stock came into the hands of Mr. H. B. May of the same town. Probably at first Mr. May was simply breeding for or in accordance with some business arrangements with Mr. Felch. At some subsequent time, just when, the writer cannot say, Mr. May began to breed Plymouth Rocks independently and continued for many years to be one of the closest students and best judges of the original variety. Without doubt the Essex strain was more sought and more extensively bred than any other and especially certain is the fact that the May-Essex family was more sought than any other family of that popular strain.

The history of this family, or strain, is interesting because of the excellent quality of many of its best representatives, but even more so because of the historic crosses involved. It has been well known that at some time subsequent to their first public appearance, Plymouth Rocks have been crossed with Light Brahma, to clear the colors as it were; thus, not only attempting to carry out the idea of Mark Pitman, but also attempting to improve on the Pitman method of selection and line-breeding, from which outcrossing certainly differs widely. The results of this cross have been heralded far and wide as wonderfully successful, yet Mr. May told the writer in so many words, that the cross did not amount to anything; that all the progeny after a very few generations found their way to market. In short, this attempt resulted as most attempts to cross two bloods of widely different temperaments do, in so complete a disintegration that little of the good in either remains.

Mr. May, however, was not any better satisfied with his original Plymouth Rocks than before he made this cross. The reason for his dissatisfaction was based upon the weak constitutions of the individuals of this breed in general and their weak disease resisting qualities. Dealers in poultry remedies, according to Mr. May, were making good livings, if not comfortable fortunes, selling their wares to the breeders of Plymouth Rocks. This state of things Mr. May thought neither creditable nor necessary, but the remedy did not at once appear. Later, while traveling in Canada, Mr. May caught sight of a male that pleased

him immensely. His pleasing parts were not his plumage, rather to the contrary—that was against him—but he displayed life and vigor in every move. It instantly occurred to Mr. May that this was the identical bird to tone up his Plymouth Rocks. Besides evincing strong constitutional vigor this bird had size and weight, a deep breast and yellow legs. These were qualities that are desired in Plymouth Rocks. The bird would probably be classed as a grade Game or cross-bred Game. This bird was purchased and bred. Three years after the cross was made all visible defects resulting therefrom had disappeared. The qualities that were infused were long bodies and long keel bones, close feathering, red eyes and very solid flesh, and these were features of the May-Essex strain for years afterwards.

The Name.—Both Mr. Upham and Mr. Ramsdell claim to have named this new fowl. As we have noticed from the articles of each, already quoted, whichever deserves the credit deserves not so much for originality, as it was undoubtedly suggested by the old-time fowl of the same name, created by Dr. Bennett. Mr. Upham really gave the bird its name as he was the first to show them, and by so doing he exploited the name as well as the fowl. Mr. Upham frankly admitted that he thought the name a good one, and that while he had heard the name frequently, he had not seen the fowl, but to distinguish between them and the Bennett creation, lest some should still be in existence, he exhibited his first trios under the name of **Improved Plymouth Rocks.**

Very few of us who breed Barred Plymouth Rocks today saw the early birds, and probably none of us saw the very first trios shown by Mr. Upham. Curiosity is ever alive wherein our interest lies, and what would we not give for a photograph or for feathers from some of the best early birds? As these things are beyond our reach, we cannot do better than to substitute mental images made by the words of those who saw and reared these birds. The birds shown at Worcester, two trios of chicks and one of fowls, are naturally the ones we think of first. Of course, Mr. Upham says the chicks were a much better match for color than the fowls. They were about the size of the standard weight specimens nowadays.

Of the Upham pair that founded the Essex strain, Mark Pitman says that the pullet was clear color, beautifully barred,

and with the exception of being too leggy was a fine all 'round specimen. The cockerel was even superior, and for general appearance as handsome as he has seen since. He thinks that one exactly like him would win some of the shows of today.

From what could be learned from literature contemporary with the early Plymouth Rocks and from the early breeders, some of whom have been mentioned, so closely and vitally were they connected with the breed's early history, an account that gives a fairly comprehensive knowledge of what may be called the formative stage of this breed has been given. To follow further these different strains and innumerable new ones is impossible because of the rapidity with which new breeders, new strains, and representative specimens of this breed multiplied. From what we have learned, however, we are safe in coming to the conclusion that the evolution of the Barred Plymouth Rock has had five different stages of development.

First, acquiring the color and markings of the Hawk-colored fowls which were, at the best, but mere suggestions of the plumage of our best modern Barred Plymouth Rocks, which is in comparison very near to perfection itself in color and markings.

From these early accounts it is clear that the first task was to breed what Upham calls the steel-colored pullets. Both Upham and Ramsdell agree that black pullets predominated among the progeny of the Spaulding cross and the writers of a little later period complain of some pullets coming black and of too many of the pullets being too dark. Red and black feathers, light-colored tails and solid or nearly solid colored flights were other features of the plumage of these birds that required time and skill to eliminate. If we consider the breed to have begun its career with the original Spaulding cross, the first step seems to have been to secure pullets that were gray or steel-colored, like the cockerels. Even then, the best of the pullets were much darker than the cockerels.

The second stage was the formative period, during which the early breeders were eradicating those evils which seemed the greatest, each to his individual opinion. All were clearing the color to a certain extent and endeavoring to produce a clean bird with distinct bars on the surface. In this particular, Mark Pitman, with his Essex County Strain, is admitted to have had the lead. Some, like Drake and Ramsdell, sought to develop large, rangy fowls, while on the other hand, Pitman and Gilman stood

out for a moderate size. Gilman was at the same time straining every nerve to produce clear yellow legs and beaks.

One of the steps of this stage was to develop a family or line of birds that would breed cockerels and pullets of the same shade of color. To accomplish this a constant endeavor was maintained to breed the cockerels darker and the pullets lighter. This step has been described in previous pages, and will be more or less often discussed in its various connections. After a time, however, males and females that matched tolerably well were bred by many persons and accompanying that achievement came better and clearer surface color and more distinct markings.

Yet much was left to be desired in these and many other directions. Underbarring, referred to at that time as under color, was weak, the bars extending but little below the surface of the plumage and failing by considerable to extend throughout the entire length of the feathers. For a time many of the females had no more than three dark bars. To develop underbarring over the entire length of the feather occupied the attention of the best breeders for several years.

The third period was then one in which improvement along the lines indicated in the preceding paragraph proceeded until real excellencies were developed to such an extent that the best exhibition specimens had in reality become good specimens, even when measured by our present Standard. Shape became more uniform and has steadily grown more so, and today, as judged by our best exhibitions, no variety is as uniform in this particular as the Barred Plymouth Rock. In this period of the Barred Plymouth Rock, undercolor became good, surface color clear, bars distinct and brassiness in male birds disappeared. All this has been accomplished during the first fifteen or twenty years of the breed's existence. When these excellencies began to show signs of approaching an accomplishment in a degree of approximate satisfaction, more attention was paid to the sharp definition and direction of the barring than heretofore. Straightening the bars and acquiring sharp definition to the edges of bars may be said to have been the fourth stage in the development of Barred Plymouth Rock plumage.

The fifth, or present stage, seems to be occupied by an endeavor to maintain all the excellencies of the past and, further,

to get more bars, or finer barring, as it is called. Even now certain specimens have overstepped in this, as it is possible to do because fine barring becomes indistinct when too fine.

The tendency of the modern breeders is toward more regular barring. The straight-across-the-feather bar, and as many of them as possible, is the ambition of many breeders nowadays. The effect is certainly very pretty, but how far shall we sacrifice shape, color of legs and beaks for perfection in barring, is the question which will shortly come up. It must be granted that to obtain fine and regular barring and strong undercolor, many have bred the females too dark in surface color. This is not decrying straight bars and strong undercolor. They have their value and efforts must be made to acquire these qualities, but it is better to acquire them slowly and retain other good features than to produce them in haste and lose other virtues.

After a careful survey of the accomplishments of a little over fifty years, breeders of this variety can look at their birds and their records with pride. Not for a moment of that time has the breed stood still. Its progress has been one continued ascent in public esteem, for improvement has been the watchword, and perfection the motto of those who have had its best interest at heart.

The great endeavor of the breeders of the present is and of the breeders of the future will be to maintain an even shade of color of the individual specimen, and of both sexes, with sharply defined edges and sharply contrasting colors, with underbarring extending to the skin and as many bars to the feather as can be produced thereon and still maintain the aforementioned qualities. Needless to say that rapid growth and large egg yield will be attributes which the breeders will insist upon more even in the future than in the past; otherwise, the Plymouth Rock would lose its well merited popularity; which Heaven forbid.

The early histories of the Plymouth Rock and the Barred Plymouth Rock are identical, inasmuch as the latter were the sole member of the family until 1888, when we find the White Plymouth Rock a member of the family with official acknowledgment of its parentage.

CHAPTER III.

STANDARD REQUIREMENTS FOR SHAPE OF ALL VARIETIES

Disqualifications

Positive enamel white in ear-lobes. (See general disqualifications.)

STANDARD WEIGHTS

Cock	9½ lbs.	Hen	7½ lbs.
Cockerel	8 lbs.	Pullet	6 lbs.

SHAPE OF MALE

Head.—Moderately large.

Beak.—Stout, comparatively short, regularly curved.

Eyes.—Full, prominent.

Comb.—Single, rather small in proportion to size of specimen; set firmly on head; straight, upright; evenly serrated, having five well-defined points, those in front and at rear a trifle smaller than the other three, giving the comb a semi-oval appearance when viewed from the side; fine in texture; blade not conforming too closely to head.

Wattles and Ear-Lobes.—Wattles, moderately long, nicely rounded at the lower edges, equal in length, fine in texture, free from folds or wrinkles. Ear-lobes, oblong, smooth, hanging about one-third the length of wattles.

Neck.—Rather long, slightly arched, having abundant hackle flowing well over shoulders.

Wings.—Of medium size, well folded; fronts, well covered by breast feathers and points well covered by saddle feathers.

Back.—Rather long, broad its entire length, flat at shoulders, nearly horizontal from neck to saddle, where there is a slight concave sweep to tail; saddle feathers, rather long, abundant, filling well in front of tail.

Tail.—Of medium length, moderately well spread, carried at an angle of forty-five degrees above the horizontal (see illustration, figures 25 and 26), forming no apparent angle with the back; sickles, well curved, covering tops of main tail feathers, conforming to the general shape of the tail; smaller sickles and tail-coverts, of medium length, nicely curved and sufficiently abundant to almost hide the stiff feathers of the tail when viewed from front or side.

Breast.—Broad, full, moderately deep, well rounded.

Body and Fluff.—Body, rather long, broad, deep, full, straight, extending well forward, connecting with breast so as to make no break in outline; fluff, moderately full.

Legs and Toes.—Thighs, large, of medium length, well covered with soft feathers; shanks of medium length, smooth, straight, stout, set well apart; toes, straight, of medium length, well spread.

SHAPE OF FEMALE

Head.—Moderately large, broad, medium in length.

Beak.—Compartively short, regularly curved.

Eyes.—Full, prominent.

Comb.—Single, small, proportional to size of specimen; set firmly on the head; straight, upright; evenly serrated, having five well-defined points, those in front and at rear being somewhat smaller and shorter than the other three.

Wattles and Ear-Lobes.—Wattles, small, well rounded, equal in length, fine in texture. Ear-lobes, oblong in shape, smooth.

Neck.—Medium in length, nicely curved and tapering to head, where it is comparatively small; neck feathers, moderately full, flowing well over shoulders with no apparent break at juncture of neck and back.

Wings.—Of medium size, well folded; fronts, well covered by breast feathers.

Back.—Rather long, broad its entire length, flat at shoulders, rising with a slightly concave incline to tail.

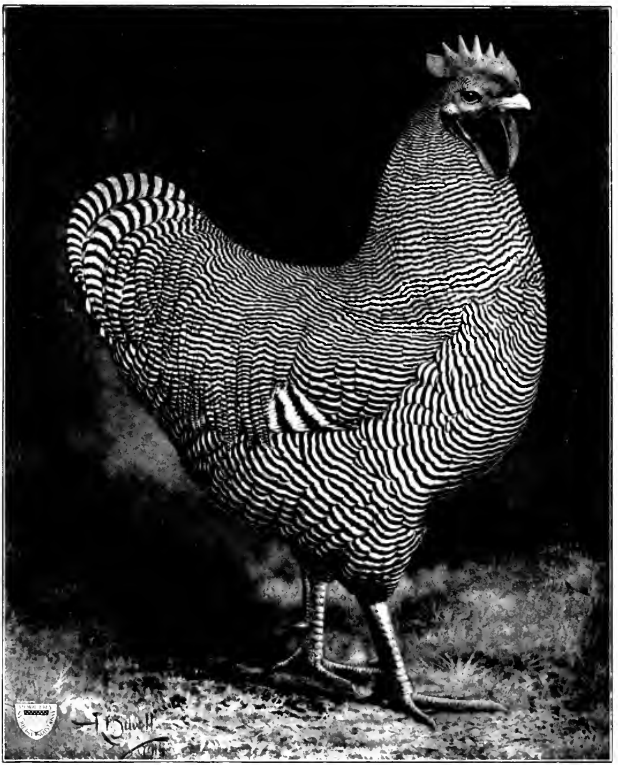
Tail.—Of medium length, fairly well spread, carried at an angle of thirty-five degrees above the horizontal (see illustration, figure 26), forming no apparent angle with the back; tail-coverts, well developed.

Breast.—Broad, full, moderately deep, well rounded.

Body and Fluff.—Body, rather long, moderately deep, full, straight from front to rear and extending well forward, connected with the breast so as to make no break in outline; fluff, full, of medium length.

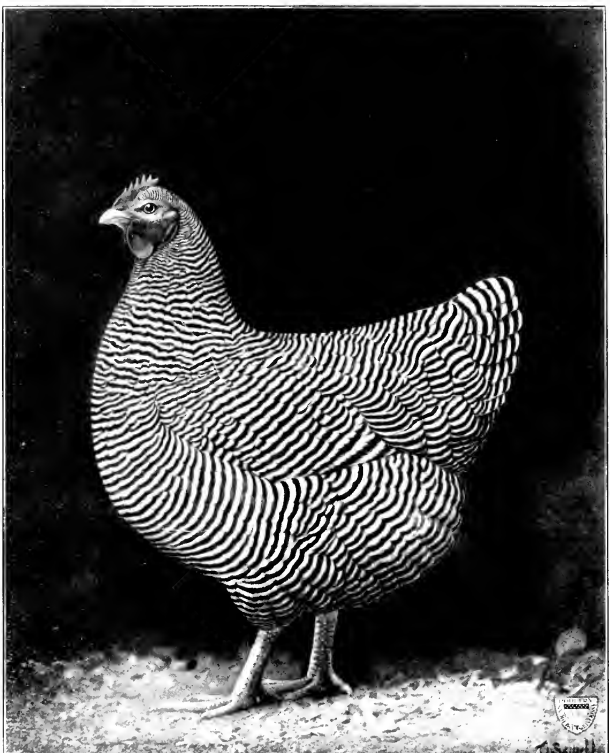
Legs and Toes.—Thighs, of medium size and length, well covered with soft feathers; shanks, of medium length, set well apart, stout and smooth; toes, of medium size and length, straight, well spread.

PLATE 3



BARRED PLYMOUTH ROCK MALE

PLATE 4



BARRED PLYMOUTH ROCK FEMALE

CHAPTER IV.

COMMON DEFECTS OF PLYMOUTH ROCK SHAPE

Common Defects

The shape description already given of Plymouth Rocks, from the American Standard of Perfection, is that of a perfect bird, and the further original treatise found in this work is merely for the purpose of clarifying and amplifying that found in that more general work. Admittedly, however, no specimen, male or female, is perfect, which means that every specimen is defective in some way in nature and degree; that is, two individuals may have defects, but of different nature, or they may have the same defect, but in different degrees. One is, then, more defective than another because it has more defects, or because it has greater defects, as the case may be.

It is the purpose of this work to point out the more common defects, and so explain their nature, that they may be readily detected and the seriousness of their nature accurately computed; also, how to mate, according to the practices of the most successful breeders of Plymouth Rocks, so that such and such defects of the parents may be eliminated in the progeny.

THE MALE

Comb.—The reader is advised to make himself at this point familiar with the nomenclature of the comb and head points. (See illustrations, plates 5 and 6.) The most noticeable feature of the head is the comb. This, the high point of the head, the top-piece, and, like the hat on a well dressed man or woman, creates a good or poor impression according to its own quality. Unless harmonious proportions between the comb and the head exist, an unfavorable impression is created immediately. For these reasons breeders pay more attention to it than to any other adjunct of the head. The description in the Standard is clear and is generally understood, but often too much importance is attached to the clause which requires five points, evenly spaced, with the front and rear points a little smaller than the other three, and each of the right length to look proportionate to the base, which should be firm, smooth, straight, free from folds, wrinkles, indentures, or thumb marks.

Carriage of Comb.—It is a matter of first importance that the comb should set firmly on the head, as a thin or limber comb is apt to droop and if a comb droops too much it becomes a disqualification, which clearly intimates that a drooping comb is a serious defect. (See illustration, Plate 7, Figure 1.)

Turning to one side at either front or rear is also a defect. This is illustrated in Plate 7, Figure 3. Thumb marks or wrinkles over the beak are quite serious defects, as the rules for cutting the same clearly show. These are shown in the same illustrations. (See, also, chapter on Cutting for Defects.) These faults usually occur when the blade is too large or too heavy. What are expressively termed "beefy" combs are inclined to this fault. Twisted combs are very unsightly and undesirable. An illustration of a twist in the comb of a male is seen in Plate 7, Figure 2, and of a female is seen in Plate 17, Figure 2.

Size Outline.—If the features are to be considered in the order in which they affect the appearance of the bird, size and outline must be next discussed. A comb should not be so large as to look top heavy or coarse. On the contrary, it should not be so small that the male seems effeminate, or that the female appears to lack health or vigor. Male heads of coarse tendencies will be found illustrated in Plate 7, Figures 3 and 5. Refined heads are demanded of both sexes in all Plymouth Rocks. The outline of all combs should be symmetrical; that is, all parts of the comb, the blade, the base and the points should be in proportion to give proper balance between all these parts.

Base.—The base of the comb should be straight, first of all, from front to rear, heavy enough to hold the points from drooping and the blade from turning to one side or the other; though extremely and unnecessarily heavy bases are not wanted, as should be understood from the Standard description. This description precludes thumb-marks, wrinkles and indentures as mentioned, heretofore. In Plate 7, Figure 4, the base is shown too narrow or thin, while in Figure 5 the base is too coarse and too heavy.

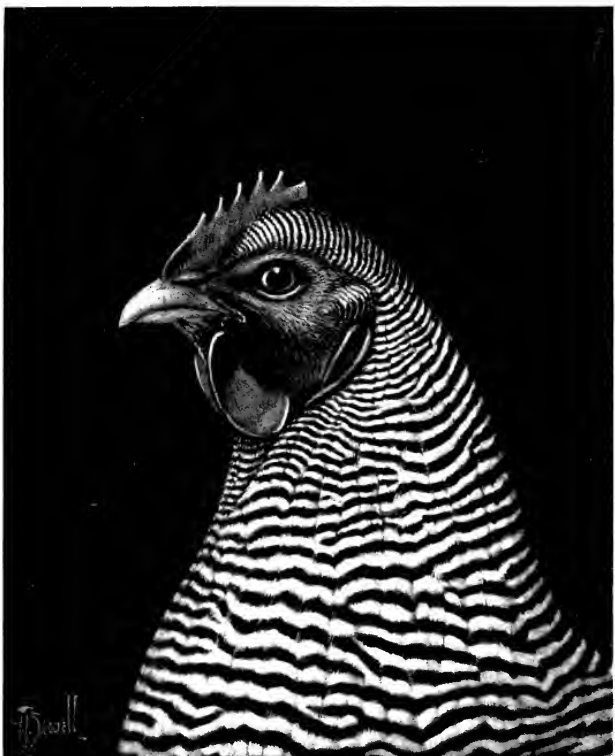
Blade.—The width or depth of the blade should be about the same as the length of the longest points or a little more to give the best setting, and the line formed by the base of the serrations or what might be termed the top-line of the blade should be nearly horizontal, or conforming a little to the top of the

PLATE 5

IDEAL HEAD OF STANDARD BARRED PLYMOUTH ROCK MALE

Ideal in Conformation for All Varieties of Plymouth Rocks

PLATE 6



IDEAL HEAD OF STANDARD BARRED PLYMOUTH ROCK FEMALE

Ideal in Conformation for All Varieties of Plymouth Rocks

skull and at the same time with the outline made by the top of the serrations, and thus help to harmonize all the parts. The blade may be taken as part of the base, and much that has been stated about the latter is true of the former; more than that, it must follow the skull somewhat to give the appearance of setting on the head gracefully and it should be of such length as to balance with the other parts so that the comb, all in all, completes its symmetrical outline. Plate 7, Figure 5, illustrates a comb in which the base is too high, also the blade too deep, the points too many and uneven, and the base of the serrations not in symmetrical alignment.

Points.—These should be five in number and evenly spaced. The front and rear points a little smaller than the other three so as to obtain a regular and symmetrical outline.

Besides even spacing, the right proportion in length of points and depth of blade should exist. Of this, the eye is the best judge, rather than a mathematical calculation. As a rule, the blade should be slightly deeper than the length of the points, but sometimes combs that are pronounced good by competent judges have points a trifle longer than the depth of the blade and other good combs have points that are perceptibly shorter. Of this feature, the first impression given to the practiced eye is usually the correct one. Plate 7, Figure 4, illustrates a comb that has too many and too long points. These points are not absolutely erect, which they should be.

A phenomenon known as the double-point occurs when the serration between two points is not as deep as between the other points of the same comb. Sometimes the serration referred to is very shallow, which gives the appearance of one broad point. This defect destroys all balance between the serrations and the points, and is a most marked blemish when viewed from the side. An illustration of a double-point can be seen in Plate 7, Figure 3.

In order to obtain a thorough understanding of what constitutes an ideal single comb, one should make a careful study of the life size illustration of a perfect Plymouth Rock male head, Plate 5, as well as of the six figures on Plate 7.

Other Head Adjuncts.—Not nearly as much attention is paid to defects of the other appurtenances of the head as to those of the comb. The shape of the eyes, wattles and lobes are clearly defined in the Standard, but unless they are very noticeably defective in shape, little cutting is practiced. Wattles may be of unequal length (see Plate 7, Figure 4), too long (Figure 5),

PLATE 7

1.

2.

3.

4.

5.

6.

ILLUSTRATING DEFECTIVE MALE HEADS, COMBS, WATTLES AND EAR-LOBES

1. Lopped comb, usually overgrown, lacks stiffness or firmness of tissue. To disqualify (see "General Disqualifications") a single comb, some portion must fall below the horizontal plane where comb begins its lop.

2. Twisted comb, an irregular shaped comb, falling or curving from side to side, being distorted from the normal perpendicular position.

3. Comb, very coarse in texture, with thumb-marks in front over nostrils. Third and fourth points grown into a double serration, rear serrations partially lopped. Wattles and ear-lobes, coarse, pendulous and wrinkled. Face, also wrinkled, causes bad expression.

Lower Row—

4. Head, narrow. Comb, serrations too sharp and too much elongated; blade, too shallow; points inclined to lop. Wattles do not match in length (one is shrunken). Ear-lobes too heavy to match comb and wattles.

5. Head, very coarse. Deformed, twisted beak (a disqualification). Comb, crooked in front, irregular, short, blunted serrations. Side springs on comb (disqualification). See "General Disqualifications." Wattles and ear-lobes too long, coarse, wrinkled and pendulous. Face, shows irregular bunches about the eye and at juncture of beak. Throat, with coarse dewlap.

6. Head typical of male of weak constitution. Head too long and too shallow. Beak, too long.

---

even too short, misshapen, coarse in texture (Figure 5), but even so, unless very noticeably so, deductions from the score are not often made. Wattles are most often cut for injuries from fighting, freezing, or tearing in one way or another. These are not natural defects and should not be discounted as heavily as though they were. Such injuries mar the good appearance of the bird most seriously. Ear-lobes in Plymouth Rocks are good as a rule and seldom cut for shape.

Skull.—Occasionally the head proper, also the beak, is too long and not nearly deep enough, and for these defects are cut, but not heavily numerically, because the allotment to these sections for shape is very small. (See Plate 7, Figure 6.)

The following shape sections are important because many of these denote practical qualities or the absence of them.

Neck.—First impressions are very often convincing, especially in a large class. One of the most important factors in making an impression is style, and style depends much upon the length and arch in the neck, for the latter gives the head its poise. If lacking in arch, it is usually because the head is carried too far forward. Note the position of head in ideal illustrations, with front of beak falling vertically back of the front of the breast. The vertical position of the head relative to the front of breast is one of the distinctive breed characteristics in the American class.

Length is important; if the neck is too short, the bird lacks style, and the neck is also probably too thick and has too much arch; if too long, it is probably too slender and lacks arch. Too long necks generally accompany birds too long in other sections, especially legs. A well-arched, full neck indicates vitality and is desired. Necks of males should carry an abundance of long, flowing hackle feathers. Without these, neck and shoulders will show an angle at the junction, which should not appear. With long, flowing hackle feathers extending well over shoulders, neck

and back seem to merge together, a necessary feature at a vital point in a beautiful top contour.

Wings.—The most common fault at the present time in this section is deformed feathers. While this deformity usually takes the form of twisted feathers, other defects such as these are not as unsightly, as the twisted feather or feathers nearly always protrudes more or less. Often several feathers are twisted as shown by illustration in Plate 8, Figure 2.

Twisted wings take on several peculiar and abnormal forms. Occasionally the end of the flight or secondaries are affected, and as in this case the defect is most noticeable. Again, the bone of the wing, at or beyond the joint furthest from the body is turned in so that the flight feathers face wrong side out, as illustrated in Figure 4. Another form of this defect is seen in Figure 3, in which the secondaries are abnormal, turning down at the points and exposing the points of flights. Occasionally wings do not fold together properly, and remain open by the side. This is what is known as a slipped wing. For illustration see Figure 1. This undesirable phenomenon, known as the slipped wing, has of recent years become common in many strains of pure-bred fowls. This appears when the flights fold in reverse rather than in the natural order; those nearest the body dropping from their natural position just inside the secondary farthest from the body and appearing outside of the lower secondaries instead of inside; thus leaving a space between the folded secondaries and the primaries, which give rise to the name "slipped wing"—the primaries have the appearance of having slipped down. The name is applied in such a case whether the primaries are reversed or not.

The outside appearance of such a wing is not altogether unlike that of what is known as the split-wing. The latter is, however, different as the flights, though folded, are not covered by the secondaries. This split is caused by the primaries most adjacent to the secondaries or the secondaries, most adjacent to the primaries, taking the wrong direction, with the result that the secondaries fail to cover the flights when folded. If such a wing is spread or open, a space, sometimes a wide one, is noted between the flights and secondaries. In some lines of blood, the flight feathers, instead of being twisted or following the wrong direction, are short and narrow and do not fold properly. (See illustration, Plate 9, Figure 5.)

PLATE 8

DEFECTS OF WINGS

1. Slipped Primaries. Primaries habitually slipped outward from under the secondaries.

2. Twisted Primaries. Primaries twisted in spiral formation.

3. Mussed Wing. Persistently failing to hold the wing feathers well folded at the sides when they are of formation that could be neatly carried.

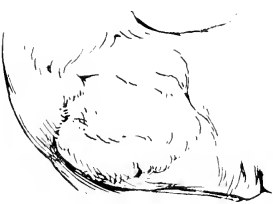
4. Down-Turned Primaries. Primaries bent downward so that they are not folded beneath the secondaries.

PLATE 9

DEFECTS OF WINGS

5. Split Wing. Wing so irregularly formed as to appear split through between the secondaries and the primaries.

6. Short Wing with Upturned Primaries. Primaries bent upward so that they will not fold neatly underneath the secondaries.



7. Drooping Shoulders. Shoulders and wing fronts drooping too low.

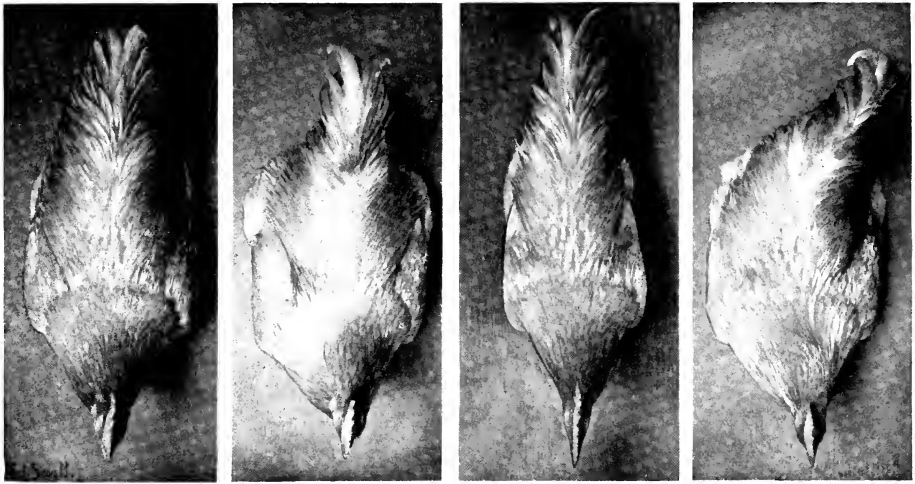
8. Drooping Points. Points of wings carried too low.

Large or long wings are not called for by the Standard, but the wing should be of moderate length, sufficient to reach the saddles in the male, and a corresponding position in the female. They should be well-tucked up and covered by the saddle or back feathers, according to sex. An illustration of these defects are seen in Figure 6.

Drooping shoulders indicate a looseness or weakness of the shoulder muscles. The unnatural effect presented by this defect may be seen in Figure 7. Another and equally undesirable defect is seen in Figure 8 of the high or too prominent shoulder with the large wing feathers held at the wrong angle, bringing the points too low. This wing is too large and the point is not tucked up or covered as it should be.

Back.—This section affords an opportunity for sharp distinction between the breeds of the American class. Plymouth Rocks' backs should be broad and of moderate length. When joined to a fully feathered, correctly arched neck, and a well-furnished, well-spread tail, carried at the proper angle, the back, with these sections, forms a beautiful top contour. The curves connecting back and neck, and back with tail, are so mild and gradual as to be most graceful and finished. To obtain this pleasing effect, the back must be just as it is described and portrayed in the Standard. Faulty backs, and there are many of them, as it is a hard section to breed as it should be bred, make obviously faulty birds. The back may be too short; this means a short body, and the birds must lack true breed type. Shortness of body means lack of weight or even a greater variance from true type. Too long backs mean too long bodies, and a variance from true type. Such birds are apt to be too flat on the sides as well as on the back. They lack grace and typical carriage. As Plymouth Rocks they are plain and unattractive. Too long backs usually lack the curve needed, to finish a good specimen, between the back and tail. They are usually too narrow and round from side to side, and again are much more apt to be "roached," that is, have a tendency to make the black line convex rather than concave. Breadth is needed in this section to give the sturdy appearance characteristic of this breed.

The four photographs of four Buff Rock males show several common faults as they appear from the top. The first, that of the ideal male, the second of a male with too short a back, too heavy side fluff; a perceptible angle at juncture of back and tail and a pinched tail. The third one, too narrow in back and body,



1 2 3 4

IDEAL AND DEFECTIVE SHAPES FROM TOP VIEW

1. View of standard ideal (Buff), male, a first winner at New York show; neck hackle flowing well over shoulders; wings fitting firmly and neatly to body; broad, rather long back and saddle. Saddle covering and merging well over tail coverts. Tail, moderate length, well furnished. Width of body carrying well back to rear. Tail moderately spread. 2. The two sides not equally proportioned. Plumage too loose; body and fluff plumage too excessive. Tail plumage pinched at sides. 3. Head, shoulders, body and tail too narrow all the way through from front to rear. 4. Back crooked with tail bent over to one side.

PLATE 11

DEFECTIVE CONFORMATION OF BACK, BODY AND TAIL

1. Tail plumage too large in proportion to back and body. Sometimes called "bushy tail."

2. Back and body slope too much toward rear. Tail plumage too much contracted and pointed in general form of tail, termed "Pinched Tail."

3. Body shows too much fluff. Upper portion of tail proper feathers are bent or missing, causing bunched or "Cobby Tail."

4. Back and tail form too nearly a straight back and tail line, or a "flat top line." Tail lacks in side furnishing.

PLATE 12

DEFECTIVE CONFORMATION OF BACK, BODY AND TAIL

5. Back and tail line too concave. Tail plumage too long and "fan shaped."

6. Body thin in front, underneath. Back at shoulders slopes too much to rear. Cushion and tail extend too much to a point or "Pinched Tail."

7. Type is bunchy; cushion, too pronounced on top, not extended well to tail. Tail too low, partly due to overfat condition.

8. Excessive fat in body draws rear end down too low, exhibiting clumsy, unsymmetrical appearance.

and the fourth, a crooked back with the usually accompanying wry tail.

For a careful study of back conformations, the reader is referred to plates 11 and 12.

Tail.—This is one of the most ornamental sections of the bird. Aside from the head, it is the most striking feature of the male. With a beautiful tail, a bird is finished; but, with the tail lacking or faulty, the specimen is deficient.

The tail must be carried at the proper angle or the beauty of the top contour is marred or entirely lost. If carried too high, the curve between back and tail is destroyed and an unsightly angle substituted. If carried too low, style and the appearance of life and action are gone. Too long tails destroy good balance, because they are out of proportion. They give too much length to the bird. The tail should be of such dimensions as to length, lateral spread and vertical spread that it balances the head and neck. Pinched tails, or tails that do not spread vertically, are very faulty, as a bird that has one is never finished or balanced. A good spread between the lower or rear pair of feathers, horizontally, is desirable, as without it the body and back appear too narrow. A fully furnished tail is a rare ornament, therefore highly prized by exhibitors.

The contour formed by back and tail have so much weight when breed type is determined that it is very nearly impossible to disassociate these two sections. The close connection between them is well shown in the series of illustrations on page 124, plate 11. The four illustrations are of male shape. In Figure 1 we see a fairly well proportioned back depicted, but the tail is too long, too bushy and too large as a whole to be in correct proportion to the body.

Figure 2 illustrates a body and back that slope too much toward the rear. The back is too narrow at junction with tail, which is too flat or carried too low and is too pinched or contracted vertically, and also horizontally. Body not filled or rounded out, front or rear, but especially shallow in front of thighs. Wing-points carried too low.

Figure 3. The appearance as a whole is too solid, compact or blocky. There is too much underfluff and coarse plumage on saddle, in tail coverts, and rear underparts of body. Tail is carried too low. Wing-points too low.

Figure 4 shows a common fault, more common, however, in some varieties than others, of the straight back and tail contour,

extending in this case from base of neck to tip of tail. The top line, as a consequence, lacks gracefulness, and the specimen is thereby given a clumsy, coarse appearance.

The four illustrations on page 125 are of faults in the shape of females. Figure 5 shows too long, shallow and narrow body, which is invariably too flat sided. The body and back are too narrow and the tail is too long and too much spread. Such tails are called fan-shaped, sometimes.

Figure 6 shows the body carried too erect in front, the back sloping too much from base of neck to rear of shoulder. Back too narrow throughout, even pinched back of shoulders. Tail pinched, which means contracted vertically or both vertically and laterally. Body in front of thighs not filled and rounded out.

Figure 7 is a comparable to the male opposite; too blocky and too coarse, too much cushion, tail carried too low. A specimen that as a whole lacks gracefulness and finish, due partly, however, to being overfat.

Figure 23 (glossary) shows a tail that has been "faked," by plucking, large sickles removed and main tail feathers plucked and bent under smaller sickles and coverts. This is sometimes done by exhibitors to hide such defects as too heavy and bushy tails.

Breast.—The best liked meat of a fowl is found on the breast; therefore, for this reason breasts that carry as much meat as possible and still retain symmetrical lines are desired for all breeds. The descriptive terms, "broad," "deep," "full," are comparative, however, and, when used to describe Plymouth Rocks, refer to Plymouth Rocks only. Breasts are frequently faulty as to shape. Some are too narrow, nearly all are not deep enough. Many are not sufficiently full to present the "front" most breeders like to see. Few breasts are full just in front and above the end of the keel-bone. This defect is very noticeable, as it is one of the first points of observation, if not the very first, when in the show coop. This fault is illustrated in outline by Figures 1, 2, 3, Plate 11, showing back and tail lines. (See also Body and Fluff.) By the above description we are led to expect a breast outlined by a series of broad, symmetrical curves from side to side, merging into the body on either side with no sharp line of distinction between the sides of the breast and the sides of the body. The same description holds nearly true when applied vertically. In this direction the breast should be full and round. The breast should be deep, so that it forms a broad, wide

curve from top to bottom which gradually merges into the line of the body formed by the bottom of the keel-bone. Thus, both horizontally and vertically, the outline of the breast should make a broad, symmetrical curve that merges into the body without breaks or apparent angles. For ideal conformation in these respects see the cuts of ideal Plymouth Rocks.

Body and Fluff.—Technically, body does not refer to the whole carcass, as in common phraseology. It refers in this connection merely to the lower part of body extending back from the front end of the keel-bone. The fluff is composed of the small, soft feathers found between and to the rear of the thighs, though the body feathers at rear of the thighs are often spoken of as such.

The body must have depth, breadth and length. Defects in one or all of these three dimensions are common. Defects in body shape are found more often in the front than in the rear. Shallow breasts are often associated with shallow bodies, especially in front of the thigh. Very often, too, the body, in front of the thighs is too short. Neither must it be too long, for the body must be well balanced. Keel-bones that are too short in front of the thighs carry breasts that lack in fullness.

Besides the defects noted in back and tail shape, defects of breast and body in front of thighs that frequently occur are clearly illustrated and should be carefully studied. Figure 1, Plate 11, shows a want of fullness in front of thigh for some distance because of shallowness of the fore part of the body. The corresponding defect in females is seen in Figure 5, Plate 12. Figure 2 also shows a break between breast and body and between body and thighs; whereas, the outlines of these sections should form one continuous line and merge into one another. The parallel of this defect in females is shown in Figure 6. Figure 3 shows a well rounded breast outline, but illustrates the "cut off" appearance seen in so many specimens immediately in front of thigh, due to the fact that the body is not deep enough at that particular point, even though it forms the necessary depth at all other points. Figure 6 shows the same defect by the same cause, in females.

Narrow bodies are generally accompanied by narrow backs that are often long, flat lengthwise, and what are termed "ridgy," that is, too much rounded on the sides. Plate 13 shows the rear views of a narrowly built and a well built male.

Shanks and Toes.—Legs that are set well apart, shanks that have plenty of bone, but are not over large and coarse, are desired, because they indicate strength and vitality. Shanks that are rather large and strong are found only with large and

PLATE 13

POORLY BUILT MALE

Narrow bodied. Legs too close together, indications of a weak constitution.

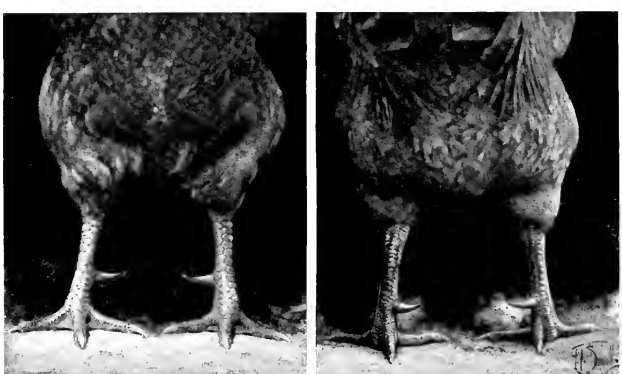
WELL BUILT MALE

Good development. Wide body and legs set well apart, indications of a strong constitution.

strong specimens. Breadth in back and body indicates a strong constitution, and legs that support a broad body are set well apart. The toes on each leg are generally stout, straight and comparatively short. Crookedness is the most common defect in toes. Sometimes this is accidental, but more often it may be regarded as one of the surest signs of inherent weakness. When the general appearance of a bird confirms this symptom, the akinship of the opposite sex should be carefully considered.

Shanks that are well set apart are illustrated in Plate 15, Figure 3. In the other illustrations several defects besides those of legs and toes are noted. Briefly stated, they are poor comb; too long, thin wattles; narrow body; shallow breast and loosely folded wings. All of which, indications of a weak constitution,

PLATE 14

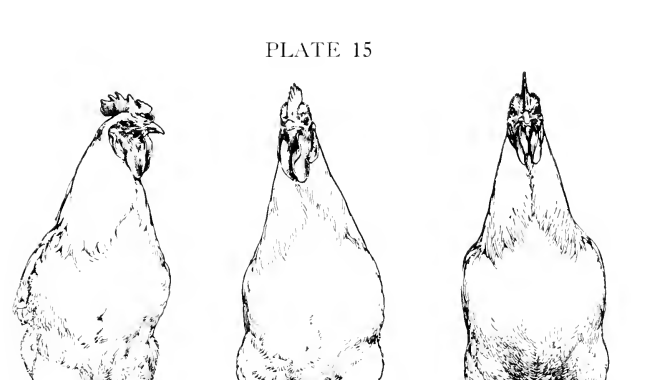


1. 2.

Correctly formed legs, spurs and toes, front (1) and rear view (2). From photograph of buff cock, a first winner at Madison Square Garden, New York.

are illustrated in this sketch. This characteristic is carried out in the position of legs and toes. The hocks are carried too closely together; a defect that is characterized as "knock-kneed," which generally accompanies narrow bodies (Figure 1). The center toe is crooked, a frequent occurrence on weak males, and the rear toes turn forward, another sign of weak constitution, called "Duck-foot." (See definition in Glossary.) Contrast these defective sections with the correct sections in Figure 3 (ideal).

PLATE 15



1. 2. 3.

DEFECTIVE, WELL FORMED AND IDEAL FRONT VIEW

1. Comb crooked in front, serrations only four, thick, irregular; shoulders not equal height; wing, twisted flight; narrow body; legs turned upward at "hock joints"; spurs turn downward; toes crooked.

2. Well shaped head points; straight comb; body, legs and toes well formed.

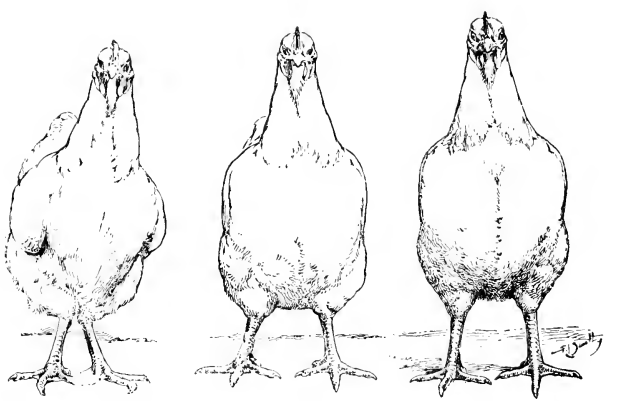
3. Same figure as No. 2 posed as square and firm on legs as possible and idealized.

THE FEMALE

In but a few sections does the shape of the female so radically differ from that of the male that it requires a different treatise. What follows applies to those sections.

Comb.—The description of comb for male and female coincides, except that the comb of the female is much smaller. A female comb may easily be too large, and while small combs are preferred, they should not be so small as to be difficult to observe, in which case this may indicate constitutional or sexual weakness, which is, however, readily determined in other ways.

PLATE 16



1. 2. 3.

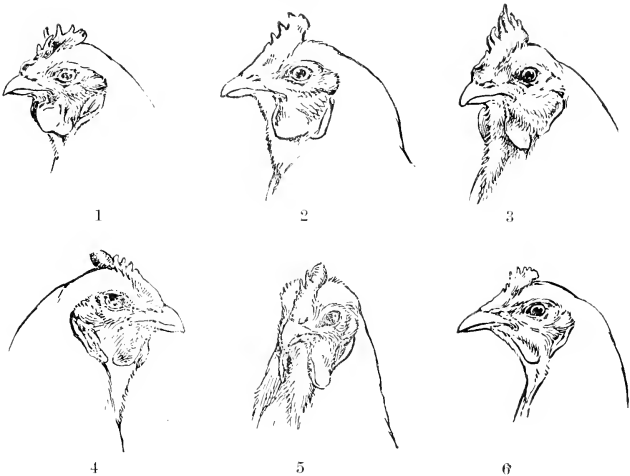
DEFECTIVE, WELL FORMED AND IDEAL FRONT VIEW

1. Comb, loose, falling to one side; neck, not nicely tapered to head; wings drooped; breast and body narrow and pinched underneath; knee joints turned inward; crooked toes.

2. Strong, substantial shoulders, breast and body, with well poised neck tapering neatly to excellent head with neat, straight comb. Strong, well formed legs and feet well apart.

3. Same figure as No. 2 idealized.

PLATE 17



1 2 3

4 5 6

ILLUSTRATING DEFECTIVE FEMALE HEAD, COMB, WATTLES AND EAR LOBES.

Upper Row—

1. Head rather short and round; comb twisted, an equally serious defect in female as well as male; side sprig at rear, small in female, but nevertheless a disqualification. Wattles wrinkled and shrunken at bottom below wrinkle, so curved outline of wattle is spoiled. Lobe heavy, not fitting nicely to face.

2. Comb very much too high at rear and too straight along the top; serrations not nicely formed, only four in number. Wattles and ear lobes angular, not nicely rounded, somewhat shrunken. Throat too coarse, not neatly formed.

3. Comb crooked in front, serrations too long, overgrown. Wattles too small. Face wrinkled, with too much plumage covering face and throat.

Lower Row—

4. Comb much too thick at rear for a single comb. [See front view on following head (5).] Wattles too small to be typical.

5. Front view of comb (4), showing rear too thick.

6. Head of a thin, unhealthy female.

The chief defects of the combs of females are illustrated as follows: Plate 17, Figure 1, twisted comb or overlapping of portions of the base. Figure 2, too deep and perhaps too thick a base, also too few points. Figure 3, too long and too many points, inclined to lean to one side, wrinkled in front. Figure 4, too few points, a blade too long, too long a space in front of the first serration. Figure 5, front view, same as preceding. Figure 6, turning to one side, too thin, indicating an aenemic condition.

Head and Adjuncts.—These sections differ in size only.

Neck.—In this section the feathers differ in character and form, one of the most noticeable sex differences in most varieties. In some breeds hen-feathered males are disqualified, the presence or absence of long, narrow hackle feathers is one of the tests that distinguish between properly feathered and hen-feathered males. In shape, the neck of the female is shorter comparatively, and not as heavy and is not as fully arched as those of the males.

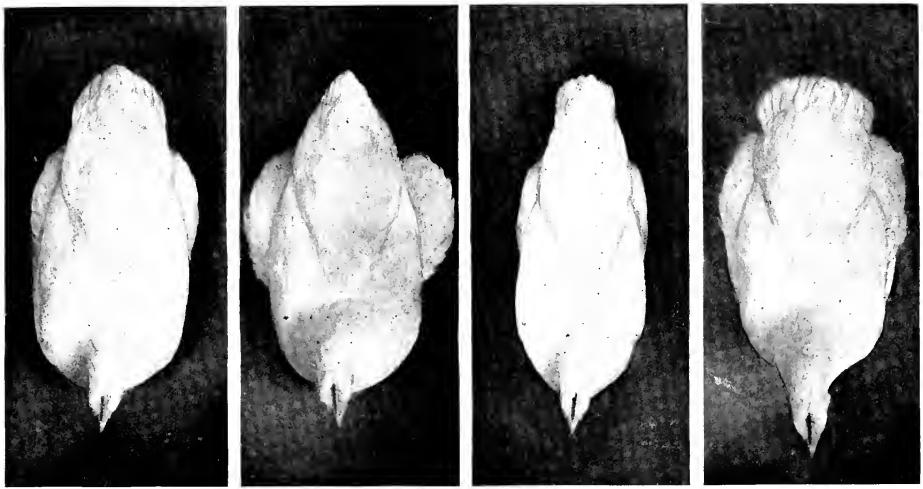
Back.—Here, also, we find the same difference in the construction of the male and female feather. The long feathers from the saddle or back of a male, called expressively saddle-hangers, are not found on females or hen-feathered males. (Hen-feathered males occur only in a few breeds, and only sufficiently often to be considered.)

These differences of feather construction between males and females creates also a different conformation of back in the two sexes.

The variation, however, is more of degree than kind. The concave is not as sharp, as the back lacks the long, ornamental saddle feathers and tail coverts of the male, and the concave curve is not nearly as short. On this account and because of the lower carriage of the tail, the body of the female appears longer than that of the male, and the effect is that of a rather long, broad, straight back, rising very gradually in a slightly depressed incline to the tail.

Tail.—This section affords opportunity for distinction between male and female. The long, curving sickles, smaller sickles, and tail coverts of the male are of a different character from any feathers found on the female. The tail of the female is carried at a five degree lower angle than with the male and appears even lower because of the difference in character of the tail furnishings.

The tail may possess the same defects as the tail of the male, but it should have the same good qualities; namely, well spread



1 2 3 4

IDEAL AND DEFECTIVE SHAPE, TOP VIEW

1. Standard, ideal shape: correct proportion shown in breadth of head, breast, shoulders, back, wings, body and tail. Body, rather long and broad its entire length. Tail of medium length and fairly well spread. 2. Body, cushion and tail not carrying breadth well back to rear, although body plumage is too abundant and fluffy. Tail is too pointed. 3. Too narrow all the way through from front to rear. 4. Body too clumsy for Plymouth Rock type. Proportionately too heavy in rear. Excessively fluffy in plumage.

base, of sufficient width vertically to avoid a pinched appearance, and should be furnished with an abundance of tail coverts of the same general character as the feathers of the back, though both broader and longer.

Slow-Feathering.—Of late years some lines are slow in feathering. The reason for the development of this phenomena is not known, but some breeders have observed that slow feathering has made its appearance coincident with the fine barring. It has been observed, too, that fine barring and narrow feathers are intimately associated. The two facts have led to the idea that when breeding for fine barring, narrow feathers are also bred, and by so doing, unwittingly, feather producing tendencies are reduced.

The effect of slow feathering and of feathers that do not grow normally or are of irregular formation upon the shape of the fowls and especially upon the shape and appearance of such sections as wings and tail is considerable.

Type vs. Shape.—Usually about the same ideas occur to us whether we hear the word "type" or the word "shape." However, they may or may not convey the same meaning. Shape may be more specific, as when used with reference to a part of the bird; that is, to one section or perhaps to more than one; while type, as generally used, refers to the bird as a whole. We have distinctions here, also, as breed types and commercial types; that is, types designated according to adaptability for certain uses; as egg-types, meat-types, general- or dual-purpose types, ornamental types, etc.

Faulty Types.—We speak of a bird as having faulty shape when one or more sections are defective; of having faulty type when one or more sections are defective in such a way as to change the typical appearance of the bird from one breed-type to another. A Plymouth Rock female by a combination of faulty back and leg shape might become more of a Wyandotte than a Rock; that is, if too short in both sections; by faulty back and body shape, more the character of the Rhode Island Red, if too long and flat in back and too shallow in body; a Plymouth Rock that was too broad and deep in body and short in legs might assume somewhat of the Cochin type. But enough has been related to show the importance of correct type in the bird as a whole, and what is necessary to secure it—good shape in every section.

CHAPTER V.

MATING TO OVERCOME DEFECTS IN SHAPE

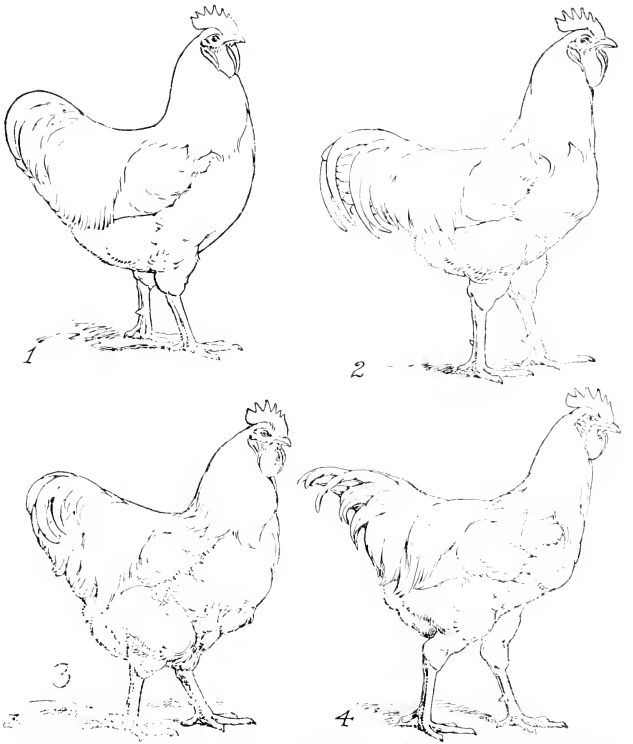
"Shape makes the breed, color the variety." Then, as typical Plymouth Rocks are primarily desired from our matings, we must look closely and well to the characters required to obtain better formed specimens.

The Importance of Shape.—So often does the impression exist that color is of primary and shape of secondary importance with the breeder of Standard fowls that a brief discourse on the above topic seems advisable. Such an impression is erroneous and far from the letter and the spirit of the Standard. Shape, in fact, with the more practical breeds, counts more than color.

Why Shape Counts More Than Color.—We must ever recall that "shape makes the breed." Without typical shape, breed-types are destroyed. A Plymouth Rock is not typical Plymouth Rock merely because it has a single comb, smooth legs and the color and markings of one of the Plymouth Rock varieties. It must first have Plymouth Rock shape. Shape is of first importance because breed comes first and without shape there can be neither breed nor variety. Faulty color injures the variety only, but faults in shape injure both our ideals. A specimen quite faulty in color has no standing with the variety of which it is a member, but a specimen that is seriously faulty in shape has no standing with the breed which it is supposed to represent, and as variety is but a "sub-division of the breed," it can have no standing as a representative of either a breed or of a variety of that breed.

Breed characteristics are vastly more important than those of the variety; for breed characteristics represent practical qualities upon which the foundation of every branch of the poultry industry rests. Deprive it of its economic value as a food supply and this industry would assume merely the proportions and importance of the breeding of pet dogs, pet cats, cage birds, and kindred fancies. It is in recognition of this fact that the American Poultry Association has made breed characteristics, which are synonymous with practical qualities, authoritatively of more importance than those which apply to variety, representing the attractive features only. Breed characteristics are described completely by one word—shape—which embraces **all** the practical qualities of a fowl. The features that distinguish varieties,

PLATE 19



DIFFERENT CHARACTER OF PLUMAGE AFFECTING FORM AND OUTLINE

1. Medium width and length of plumage, compact form, smooth surface, as called for in the Standard ideal type.

2. Extremely narrow plumage, with little underfluff. Extremely long plumage flows over form of body but does not add so much to roundness and plumpness of appearance.

3. Broad, fluffy plumage, causing the outlines of the fowl to bulge and appear lumpy.

4. Narrow plumage, with medium amount of fluff, presenting somewhat angular outlines of body.

a difference in color, markings, shape of comb, etc., are merely accessories that make fowls attractive and likable. The problem of correcting faulty shape, because it is a breed problem and equally applicable to all varieties of Plymouth Rocks, should then receive our first and most serious consideration.

The Influence of Health on Shape and Color.—Good shaped specimens are always healthy. It is useless to expect puny birds to be good in shape. Deep bodies, full, round breasts, broad backs and stout shanks are not developed by any but the most rugged constitutions; but these are characteristics of all good Plymouth Rocks.

One factor in the production of color has occurred to but few, but it, nevertheless, is a most important one because, though a bird may have perfect inheritance along color lines, it will count for naught if it is without health. By health is meant continuous health from birth. A sickness of but a week, a day or an hour has its effect. Loss of natural gloss and intensity of color are sure to follow. Whether ill health utterly destroys the chances of winning depends upon its nature and duration. The best birds, both in shape and in color, are the ones that besides inheriting good quality, grow normally or rapidly from the start, and are always in excellent health. Health affects shape as well as color. In order to grow healthy birds, breed from such and give both old and young the best of care.

To produce good shape especially, parents that are ruggedly healthy are absolutely necessary to succeed.

An Ideal Mating.—An ideal mating for correct form would consist, if it were possible to obtain them, of a male and females that were perfect according to our Standard ideals. As perfect specimens never exist, ideal matings are not made. That being true, a model mating would consist of both male and females that nearest approached our ideals; that is, as far as shape is considered, the best mating that it is possible for any one to make is to place with the best male procurable the best females that can be obtained. When so mated, a large per cent of the progeny will be as good as their parents average, in some cases better, and in a few instances the specimens would be expected to excel both parents in shape requirements.

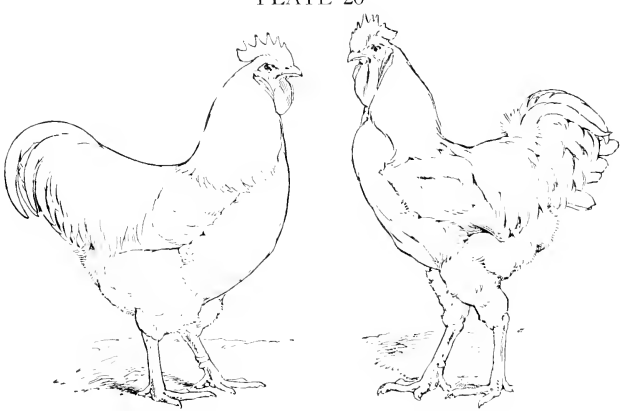
A few generations of breeding according to this plan, the best shaped male mated with the best shaped females, may be relied upon absolutely to establish a strain of any variety that will excel in shape requirements.

Other Considerations.—It often seems advisable, and undoubtedly is so, to use in our matings specimens though more or less deficient in shape, yet excellent in other requirements, as color, markings, head points, etc., and the question then becomes how to offset these shape defects.

Two General Methods.—In a general way there are but two methods. One is to offset a defect by mating to a bird of the opposite sex that has a defect of such a character as to counterbalance the first defect. For example, a male has a comb with but three or four points and is mated to a female with six points on her comb. This is a fair illustration of the principle of offsetting one defect by another of the opposite character. This has been largely practiced by breeders in the past and is yet, to a large extent, to remedy defects of all kinds, either of color or shape.

Of late the most advanced idea is to offset all defects by

PLATE 20



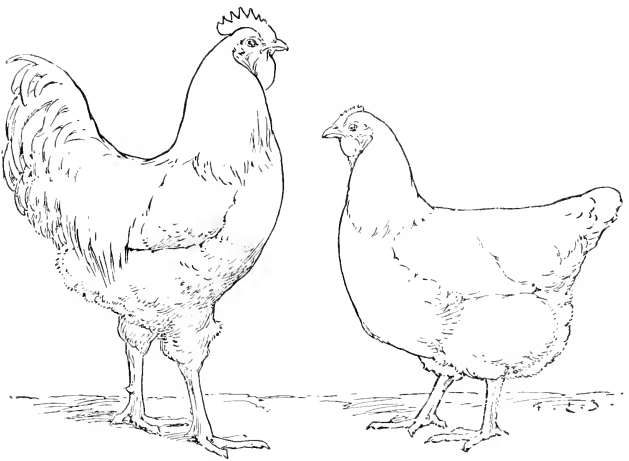
SYMMETRY AND AWKWARDNESS

1. Symmetrical, with all sections properly proportioned in relation to each other. Outlines of graceful sweeps and curves.

2. Unsymmetrical—sections forming angular junctions with each other, causing awkward, ungraceful outlines.—F. L. Sewell.

mating to birds that are near perfection in the character in which one is defective. In that case, a male with a four-point comb would be mated to females with five-pointed combs if possible. The results may not be as gratifying the first year, but later they will be much more so, if the purpose is to establish a strain in which a five-point comb is a well established feature. If the first principle be applied for the purpose of offsetting defects, besides offsetting too few points with too many, we would expect to offset too large combs with too small, blades that were too short with those too long, blades too broad with those too narrow, that followed the head too closely with those that were elevated too much, too thin combs with too thick, bases that

PLATE 21



CORRECTIVE BREEDING—I

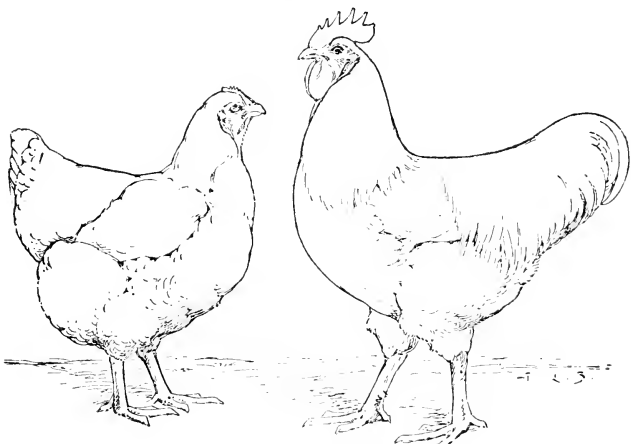
With male too short and too concave in back with tail carried too high, should be mated female with back, saddle and tail showing form inclined to look more flat over the top line. While always seeking to avoid mating types that possess extreme differences, it will be needful to avoid mating together individuals that show similar extremes.—F. L. Sewell.

were too narrow with those that are too deep, too long points with too short, uneven serration with even, bulges in comb with a smooth comb, and vice versa.

If the second principle was applied, all these defective combs would be offset by one as near perfection as it was possible to procure on a living specimen of the opposite sex, depending upon a constant application of this principle to obtain satisfactory results.

In some of the previous pages an endeavor has been made by combining illustration and descriptive text to inform the reader in regard to the most common defects of each and every section. The problem for the reader, if he be a breeder, as may be fairly assumed, is not only to acquire a knowledge of the faulty shape in all its different phases, but to become acquainted with correct and reliable methods of eliminating these faults. To make the

PLATE 22



CORRECTIVE BREEDING—II

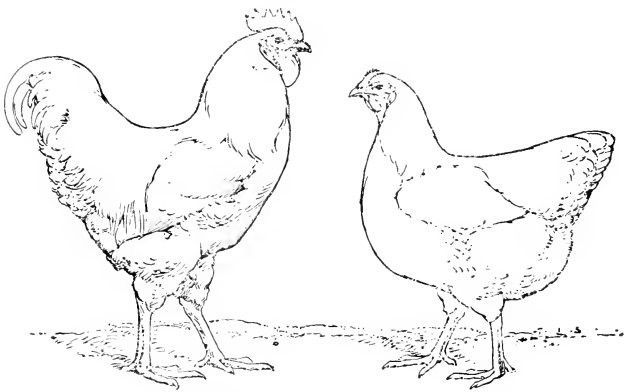
A female that is decidedly coarse, showing too strongly the Cochin ancestry as being in evidence by loose plumage, short wings, pronounced fluff and side cushion, as well as too deep body and rather short legs.—F. L. Sewell.

subject of mating to correct faulty shape as clear as possible, the accompanying sketches should be carefully studied and compared with the ideals.

The subject of corrective mating for faulty shape can be so much more easily and quickly understood from the sketches presented that extended discourse is both unnecessary and undesirable. These sketches are graphic explanations of the application of corrective mating for defective shape in several of the most commonly occurring forms. The explanations are based, as is stated, upon the principle of corrective mating which is an endeavor on the part of the breeder to offset a defect of one sex by mating with a fowl of the opposite sex that has the opposite tendencies in the same section or has most pronounced perfection in that section.

The Two Extremes.—As an introduction to the subject, the artist has contrasted the sketch of the ideal male with the sketch of a very unsymmetrical or unshapely specimen. One of the two

PLATE 23



CORRECTIVE BREEDING—III

Because of excellencies of color or markings, possibly for both reasons, it is desirable to use males that are too fine in bone and too light bodied. Such males must be mated to rather large, fully developed and splendidly formed females.

sketches presents the reader the sum of what is good or ideal, while the other gives graphically almost, if not quite, a complete conception of all the faults to which a fowl is heir, or at least, all the most common ones. Each and every fault could, of course, be emphasized or enlarged upon, though uselessly, because a specimen that in life carried a fractional proportion of these faults, either in number or degree, would be useless as a breeder. As a rule, specimens that are seriously considered for breeding purposes have no more than one or at the most two glaring faults, while this sketch represents every glaring fault in each and every section from comb to tail and tail to toes. It gives, however, a splendid example of what should not be, and of the many bad features to avoid when selecting a breeding male. (See illustration, Plate 20.)

Perfection in Shape Unattained.—Though it is unnecessary

PLATE 24

CORRECTIVE BREEDING—IV

Very often it happens that females which are large, vigorous birds and are very attractive because of excellence in color and markings are not well balanced, being too long in front and too short behind the hocks. This sketch represents such a female and portrays the correct conformation of a suitable mate.—F. L. Sewell.

and foolish to use too faulty specimens in the breeding pen, it is equally impossible to secure those that are perfect in shape, which means that faults of greater or less magnitude in breeding birds must be condoned and corrected by skillful mating of the sexes.

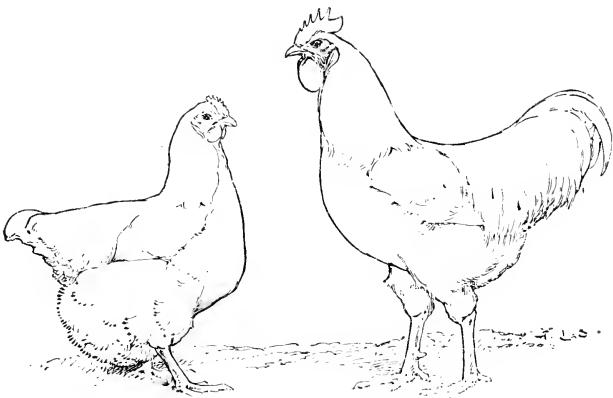
Mates for High Stationed, Short Bodied Males.—The artist first presents the problem of mating a male that is too high stationed, too short in back and too long and rather pinched in tail, that on the whole leans decidedly to the typical shape of the Langshan. The sketch next presented shows a female with opposite tendencies—a long, rather too flat back and tail that is carried at a low angle; a deep, full body, rather short shanks and head too far forward in order to counteract the too upright carriage of the male. (See illustration, Plate 21.)

Mates for Coarse Females.—The second sketch presents the problem of mating a female that is decidedly coarse. As we note the full, loose feathering and beefy characteristics, the large head, too full and broad neck, closely tucked and short wings, back slightly cushioned at sides, the very full breast and side fluff—all told, her body is too short, broad and deep. For her mate a male is selected, that while it closely resembles the Standard, is still a little long with a well concaved back, a little too shallow and a little too long in the body. (See illustration, Plate 22.)

Mates for Light Bodied Males.—The third problem in mating is another that often presents itself; that of selecting for a male that lacks full development in body a female that will correct this serious defect. Males that excel so much in plumage and head points are often poorly developed or lack frame or bone, as the expression is. Such males should be mated with females that have bone, that is, size and weight, and are splendidly formed in those sections in which the male is weak. Light bodied males, or those that are of light frame or light in bone, are almost always deficient in breast, short and shallow in front of thighs, have too deep a curvature in back and carry the tail too high. Compared with the body, the tail looks long. We see these tendencies shown in this sketch and note easily the full, well-rounded breast, broad, full back and short, well-spread tail of the female that is carried rather low, characters that are sure to have a corrective influence with reference to the faults of this male upon the progeny of such a pair. (See illustration, Plate 23.)

Mates for Short Bodied Females.—The fourth sketch presents the problem of selecting the male mate for a female that is too short in the rear or behind a line dropped perpendicularly at the rear of the hock joints. The effect of such conformation is to tip the body forward—that is, to give it, as it is often expressed, a "ploughy" carriage. The male is long in both back and body with a slight tendency toward too upright carriage. Besides the fault already mentioned, the female, as represented, has others of moment; too long a tail which is carried too uprightly, a slightly cushioned back which is also pinched at the sides and a croppy breast. The male with its broad back, very fully covered with saddle hangers at the sides and at the same time rather flat on top, is well selected to correct what tendency

PLATE 25



CORRECTIVE BREEDING—V

With female predisposed to accumulate abdominal fat too easily, it is well to use a male of the opposite temperament—one that is active and sprightly.

With female possessing too much fluff on the plumage, a male with plumage inclined to firmness and fineness and narrower in feather should help to correct and produce plumage in the offspring nearer to Standard.

Legs too short in the female should be mated to males with legs slightly above the average in length.—F. L. Sewell.

the progeny may have to follow the dam in this respect. The breast of the male also presents a clean, true outline which should counteract the too full line of the female in this section. (See illustration, Plate 24.)

Males for Heavy Bodied Females.—The fifth problem and the correct solution of which is particularly important in view of the very general tendency among females to take on an excess of flesh, particularly in the abdomen after their first year, is to select males for these females with shallow bodies in rear, or shallow abdomens, but with good breast development and good top lines. Such males have, as a rule, rather long shanks and are rather highly posted, which is desirable in a male for a mate to a female of the above description. (See illustration, Plate 25.)

SECTION II.

CHAPTER I.

BARRED PLYMOUTH ROCK PLUMAGE

STANDARD DESCRIPTION

Disqualifications

RED in any part of plumage; two or more solid black primaries, secondaries or main tail feathers; shanks other than yellow, dark spots not to disqualify. (See general and Plymouth Rock disqualifications.)

COLOR OF MALE AND FEMALE

Beak.—Yellow.
Eyes.—Reddish-bay.
Comb, Face, Wattles and Ear-Lobes.—Bright red.
Shanks and Toes.—Yellow.
Plumage.—Grayish-white, each feather crossed by regular, narrow, parallel, sharply defined, dark bars that stop short of positive black; free from shafting, brownish tinge or metallic sheen; the light and dark bars to be of equal width, in number proportionate to length of feathers, and to extend throughout the length of feathers in all sections of the fowl; each feather ending with a narrow, dark tip; the combination of overlapping feathers giving the plumage a bluish appearance and of one even shade throughout.

COLOR OF PLUMAGE AND ITS COMMON DEFECTS

From the Standard description of plumage for Barred Plymouth Rocks, one may discern immediately that it may have defects of two general characters: first, the fundamental colors may vary from the ideal; second, the barring may be irregular, but in both characters the defects may have many variations. By considering the very well expressed and accurate description of the Standard, thoughtfully and with a strict and broad usage of each and every term employed in this description, one

should detect every fault known to a barred feather. But it is not often that a novice discovers one-half, or even one-fourth of them. For this reason, instruction along this line is necessary and an enumeration of all the faults of both characters that commonly occur is advisable. It is natural that we should discuss the colors before the barring, because it is the difference or contrast between the two colors that is in reality the making of the bars.

The Ground Color.—This is described as grayish-white and we call grayish-white the ground color, not because the Standard uses the term "ground color," but because the plumage is described as "grayish white, each feather crossed by, etc.," which indicates clearly enough that grayish-white is the major or ground color. It must be considered not absolutely independently, but in connection with its relation to the "dark bars that stop short of positive black." Grayish-white is very near white. The nearer white we get the light bar or ground color, the greater the contrast between the light and dark bars—that is, when the dark bars retain the same intensity; contrast, within certain limits which are fittingly governed by the Standard description, is desired, as it adds much to the attractiveness of the birds. Breeders speak admirably of this or that specimen because of "such a snappy contrast," and the expression is truly expressive of a condition that is a creator of beauty in a Barred Plymouth Rock.

Formerly the Standard description read a bluish-white, but this modified the pure white more than the term "grayish" and consequently was changed because it did not furnish as great a contrast and therefore not as "snappy" barring.

The Dark Bar.—There is much to notice in the Standard maker's selection of the term. It carefully avoids the word black, except to say that positive black is what the bar must not be. This clause, "stop short of positive black," prohibits all lustre, sheen, or gloss. For the sake of contrast, however, it is desirable to approach if not to attain a positive black. One writer has stated this proposition in these words: "The whiter the white bar and the darker the dark bar, the more beautiful the bird." It is certainly true that the converse of what was stated about the light bar is true of the dark bar—that is, the darker they are the greater the contrast between the dark and light bars; provided, of course, that the light bars are of the same shade in all cases. Previous Standards have described the dark bar as

"bars of dark blue that stop short of positive black." This was misleading, as there was no "blue" to be seen and all that ever existed was the product of imagination and not breeding. Blue-black was another term used, but the only reason given by any one for the use of the term blue was that it excluded any brown shades. This the present Standard does by explicitly stating that the dark and light bars as well shall be "free from shafting, brownish tinge or metallic sheen." Brown is not a desirable shade in Barred Plymouth Rocks; in fact, any suggestion of it is harmful because it mars the appearance which the overlapping feathers give the plumage when viewed in certain light reflections. Metallic sheen is not sought, as obviously that affects the bluish appearance as well as the brownish shades. Of the two, however, the sheen is many, many times to be preferred, as it denotes strength of the dark bar and as a breeding quality is often a desirable attribute, as explained in articles on mating.

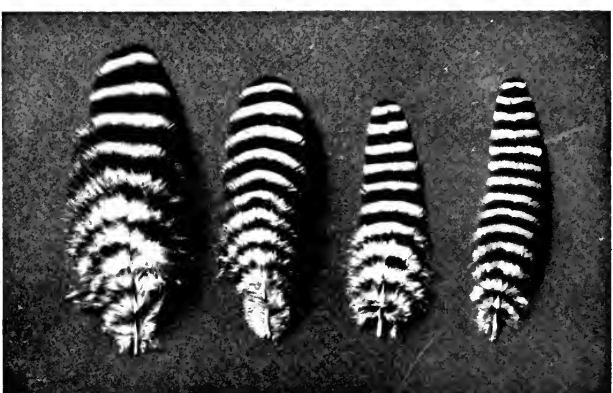
Shafting.—The shaft of the feather is often light where it should be dark, for the dark bar should run through the shaft. That is, the shaft should be the same color and shade as the bar at right angles with it; where the bar is light the shaft should be the same shade; where the bar is dark the shaft should match. Sometimes the shafts are noticeable because they are lighter than the corresponding bar. Often the shaft in the light bar is still lighter than the bar. This gives the effect of three colors, whereas only two are called for and only two desired.

Width of Bars.—"The light and dark bars to be of equal width." This statement is clear, but it does not designate the width. We find the bar further defined by the word "narrow," occuring in the clause, "each feather crossed by regular, narrow, parallel, sharply defined dark bars," etc. This descriptive adjective is well used, for the tendency for a number of years has been to narrow the bars. In fact, that has been one of the leading aims of all progressive Barred Plymouth Rock breeders for years past. By requiring narrow bars and bars of equal width at the same time, both light and dark bars must be narrow. Twenty years ago and previously, the light bars were much the wider of the two, but the ideal of straight across, narrow barring became more and more sought and the width of the light bar was gradually reduced until the dark bar actually on many of the winning specimens became the stronger or wider, and this is actually the condition today on many winning specimens. This fact need not be allowed to lead any one into the belief that wider dark

bars are desired, for such is not the case. Finely or closely barred birds are, however, most emphatically demanded for the show room, and without question specimens in which the dark bar slightly predominates appear to be much more closely barred than those on which the light bar is a little the broader. For this reason, if one bar or the other is to predominate, all breeders and judges as well, without dissension, prefer that it should be the dark bar.

Direction of the Bar.—The ideal bar extends straight across the feather—that is, at right angles to the shaft. Every bar is

PLATE 26



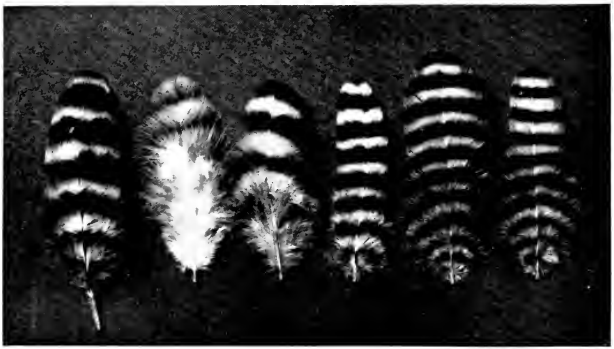
1 2 3 4

BARRING IN BARRED PLYMOUTH ROCK PLUMAGE

Relative width of bars: 1. Broad. 2. Medium. 3. Narrow. 4. Extremely narrow.

Note—This group of feathers may lead to the conclusion that broad feathers have broad bars and that narrow plumage has narrow bars, which does not always prove to be the case.

PLATE 27



1 2 3 4 5 6

SOME OF THE DIFFERENT CHARACTERISTICS OF BARRING FOUND IN BARRED PLYMOUTH ROCK PLUMAGE

1. Feather from wing-bar of a very dark colored male. Dark color very predominant; bars very coarse; dark bars not sharply defined, inclined to blend into light bars; dark bar at tip is very much narrower than other bars of this feather.

2. Feather from breast of a very light male. Light ashy-gray bars very coarse, only two showing plainly across the web or surface; tip wide and nearly all of light color but very faintly darkened at tip; fluff or undercolor nearly white.

3. Feather from wing-bar of rather dark female. Bars few, very coarse and broad; unusually broad, dark marking at tip; only two dark bars and two light bars across web proper; one strong bar across where web and fluff join; one faintly colored, gray bar across fluff.

4. Feather from wing-bar of medium colored female. Bright contrast between dark and light bars, dark bars running somewhat into light bars; dark bar only a spot at tip instead of a well-defined bar across the end; light bars too broad toward tip.

5. Feather from cushion of female, darker than medium. Dark bars slightly inclined to be crescentic in web and even more crescentic in fluff; barring quite regular from tip to base; bar at tip shows slight grayish edging (or frosting).

6. Feather from neck of medium colored, high quality female. Dark and light barring very regular in web, crossing nearly at right angle; bar very straight at this point; dark and light bars in web of nearly same width; bar at tip quite correct; barring in fluff not quite as regular as in preceding feather.

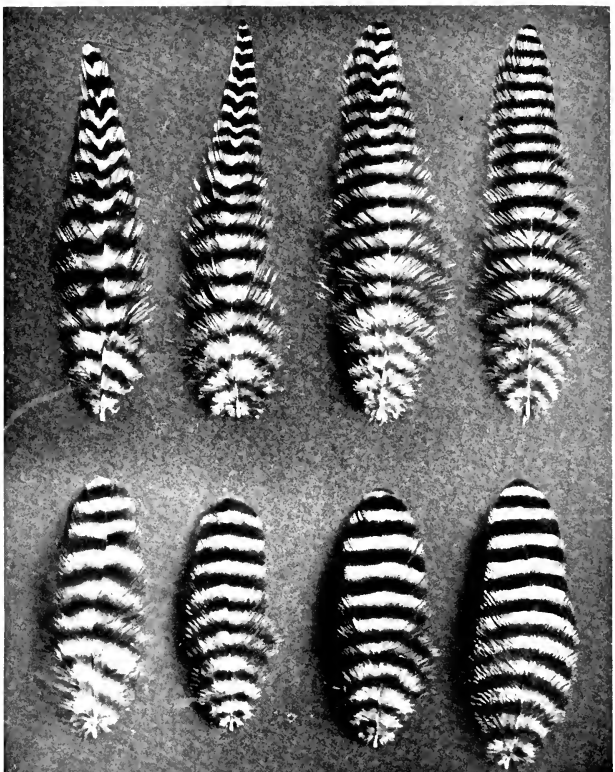
supposed to take this direction. (See definition of barring in glossary.) This makes the bars parallel, with one another. Narrow bars of equal width, all parallel, certainly produce some very pleasing effects, but owing to the difficulty of producing them, birds that possess them are exceptionally few. Variations from the rule take many different forms. In the first place, it is very difficult to produce bars that run absolutely straight across the feathers. It has been approximated in the plumage of the female and to almost the same degree in some sections of the male plumage, but in hackle and saddle there remains a very strong tendency to assume a V-shaped bar. Breeders have made great effort during recent years to straighten out the bars in these sections and not without some degree of success, for the bars in these sections are certainly much more nearly straight than they were a few years ago. That is, the open end of the inverted V is much wider than it used to be. In fact, the V has opened to such an extent that the effect of the bars in these sections in some of the specimens that excel most is that of being nearly straight across the feather. That the bars are not absolutely straight across is due to the difficulty of breeding bars that will be straight in the center of the feathers of these afore-named male sections. Bars, even in these sections, are straight enough to be so-called in the border or web of the feather, but seem to follow the direction of the barbs of the feather in the center. Thus, the construction of the feather in these sections seems to be the obstacle to overcome. Bars are much more nearly straight in the sections: breast, wing-coverts, main tail and tail-coverts, in which this construction of the feather is less pronounced.

Because the border or thinly barbed portion of the feather is much more narrow in nearly all sections, structurally, the female plumage resembles that of male breast and wing-coverts rather than the hackle and saddle plumage, which is quite different. If the bars are ideal, that is, coincide with the definition of "barring," the two edges will be parallel and will have what some breeders call "square" or "square-edged" bars; that is, bars that meet the edges of the feather at right angles, which would not be the case if the bars were "curved" or V-shaped instead of straight across.

Bars are sometimes "notched" or "scalloped," that is, while they seem straight at the edges of the feathers they do not maintain this direction throughout their entire length but become

FOUR DEGREES OF QUALITY IN COLOR AND BARRING ON NECK OF BARRED PLYMOUTH ROCKS
PLATE 28

1 2 3 4



5 6 7 8

Upper Row: Male, 1—Ordinary, 2—Good, 3—Very Good, 4—Idealized.
Lower Row: Female, 1—Ordinary, 2—Good, 3—Very Good, 4—Idealized.

slightly V-shaped at or near the center. This is, of course, not desirable and manifestly does not conform to the description of the Standard for Barred Plymouth Rock color nor the definition of "barring."

Definition.—"Sharply defined" is another adjective applied to "bar" in the Standard for Barred Plymouth Rocks. This means that the line of separation between the light and dark bars shall be sharp and definite. This line of separation should be as sharply defined as though drawn with a chisel-edged pencil. Too often the definition between the dark and light is gradual rather than sharp. Another fault along the same line is the extending of fine dark lines into the light bars. When this fault is so pronounced that it becomes noticeable, the plumage presents an appearance more speckled than barred.

Undercolor.—Underbarring is really what undercolor means in a Barred Plymouth Rock. Because of the clause requiring "bars extending the entire length of the feather," the underbarring should be clear and distinct, though the intensity of the dark underbar is never of the same degree as of the surface bar and consequently the same sharp definition can not be expected. Yet, the colors should be clear, the barring comparatively distinct and free from shafting. The regular, narrow, parallel bars should extend to the skin.

Surface Color.—The surface color should be clear, clean, bright and snappy. By this we mean free from foreign color, any tinge of brown or yellow, etc. What are known as rusty shades occur even in well-bred birds, though such must be rather inferior specimens even if well bred. This means that brown is mixed with the color of the plumage to a lesser or greater extent. This is seen most commonly in the shoulder, center of back and wing-bows, more often in males than in females and is more apt to be present in old than in young birds. Sometimes natural fading of the dark bar is responsible for its presence but more often it is in the specimen because of its inheritance. On the edge of the dark bars is where this shade shows most plainly.

Crocky shades are seen and the term refers to a seemingly thin veneer of black over the plumage of the bird, as though someone with soiled hands had stroked the bird rapidly. Needless to state, this mars the appearance of the bird so decidedly that an otherwise meritorious specimen becomes of doubtful value.

PLUMAGE SHOWING THREE DEGREES OF QUALITY IN COLOR AND BARRING ON WING PRIMARIES. BARRED PLYMOUTH ROCK MALE

PLATE 29

1 2 3

1—Ordinary. 2—Fair. 3—Idealized.

PLUMAGE SHOWING THREE DEGREES OF QUALITY IN COLOR AND BARRING ON WING PRIMARIES, BARRED PLYMOUTH ROCK FEMALES

PLATE 30

1 2 3

1—Ordinary. 2—Very Good. 3—Idealized.

Barred Plymouth Rocks, like white fowl, often show brassiness or creaminess. This is because the ground color or light bar is not clear and in this case show yellow, giving as a whole the brassy or creamy appearance.

MATING TO PRODUCE EXHIBITION SPECIMENS

The breeding of Barred Plymouth Rocks, even of the highest exhibition merit, is not as difficult as is generally thought. The breeder who starts with good individual specimens and follows a few simple and established laws of mating can be assured of success from the beginning.

It is admitted that the best exhibition specimens are produced by the double mating system, which to many seems to be hard to understand, but which in practice is simplicity itself, or if complicated, is no more so than the single mating system, except that we have two systems to deal with instead of one. By double mating, we in many ways simplify our breeding scheme because we eliminate the problem of balancing the influence of the two sexes as to color, which is the most difficult one involved in the single or standard mating system. The double-mating system is undoubtedly more universally used and understood by breeders of Barred Plymouth Rocks than by those of any other variety. The general principles of this system have been explained in the preceding section and only the special application of these principles to Barred Plymouth Rocks remain to be made clear.

Double matings are necessary to produce standard colored specimens of both sexes because in any mating, be it according to the single or double mating systems, the males will come several shades lighter than the females, while the Standard, by describing the color of both male and female in exactly the same words, calls for the different sexes to match in the showroom. To accomplish this task very dark matings are used to keep the males dark enough to match the females, and comparatively light matings to produce females light enough to match the males.

We have a standard description for shape, such that males and females correspond; that is, males and females of standard shape, when mated together, produce standard shape specimens of both sexes. That this statement is approximately true is proved by the fact that very few breeders make special matings to overcome shape differences in the sexes of any of the Standard breeds and varieties. Barred Plymouth Rocks are no exception to the laws that govern the breeding of other

varieties of Plymouth Rocks as far as conformation is involved; therefore, the general treatise upon that topic will apply; no special treatise being necessary. Naturally, then, this chapter will be expected to omit such a treatise and deal with the problems of breeding exact color and correct markings.

The Chief Difficulty.—It is a well known and universally recognized fact among the well informed along these lines of endeavor that the Barred Rock males are as a general occurrence lighter in shade of color than the females.

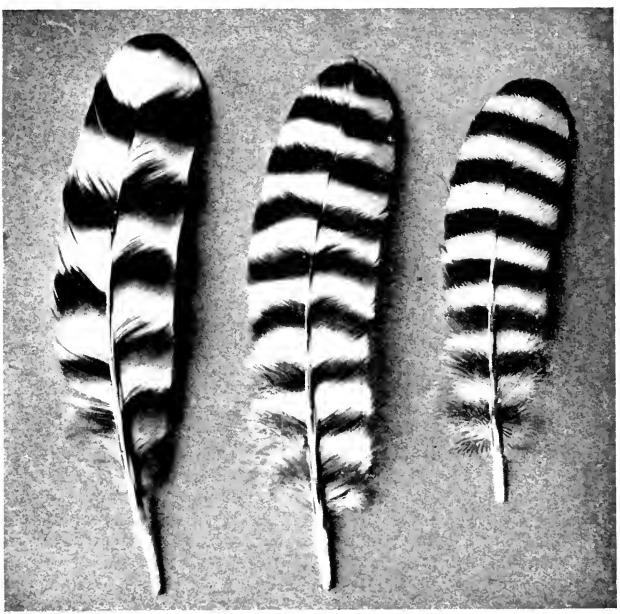
This phenomenon of light colored males and darker colored females from the same parents is not thoroughly understood. Many have sought to explain it by stating that the male of the original cross was light and the female black; hence produced light males and darker females. That this explanation is no explanation at all, everyone at all familiar with the laws of breeding recognizes.

The very first breeders of this variety discovered that the males from the same matings were much lighter than the females. We have in Mr. Upham's account the statement that the first cross of Spaulding's produced females most of which were black and that but few were gray, while all the males were gray. Mr. Ramsdell makes the same statement. Thereby, we learn from the beginning the females came much darker than the males and this tendency was much more pronounced in the earliest days than later. It would appear that skillful mating has overcome this tendency slowly, gradually and to a certain extent only, because the existence of such a tendency we can not deny even at the present day, over fifty years since the origin of the variety; but still, skillful breeding, certainly, must be conceded, because improvement in every way, the evidence of which is on either hand in every community in the land and nearly every country on the globe, yet there must be a strongly dominant influence, naturally inherent in this variety, when, after fifty years, an undesirable tendency, to eliminate which every effort has been made, will show itself even in the slightest degree. The student is anxious to understand and demands a plausible theory of explanation. The breeder questions why, so that he may overcome this tendency as fully as possible or more completely than his competitor.

The Generally Accepted Explanation.—A few explanations of varied character have been offered and the one that is the

THREE DEGREES OF QUALITY IN COLOR AND BARRING ON WING SECONDARIES, BARRED PLYMOUTH ROCK MALE

PLATE 31

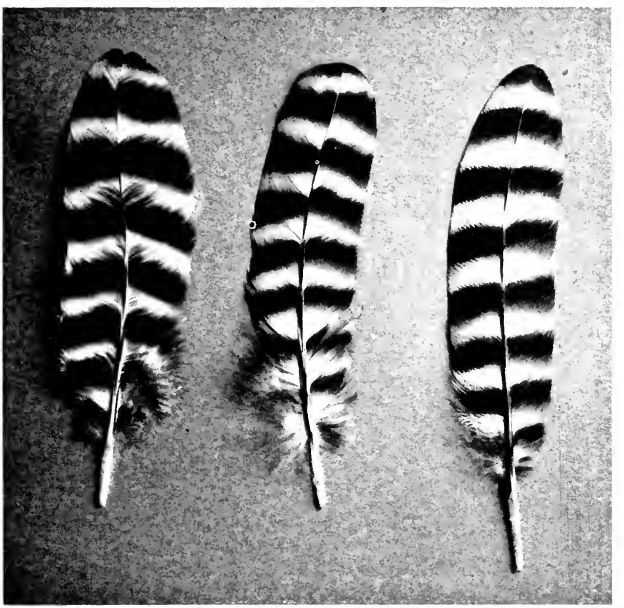


1 2 3

1—Ordinary. 2—Very Good. 3—Idealized.

THREE DEGREES OF QUALITY IN COLOR AND BARRING ON WING SECONDARIES, BARRED PLYMOUTH ROCK FEMALE

PLATE 32



1 2 3

1—Ordinary. 2—Very Good. 3—Idealized

least sound in both logic and science, strange as it may seem—the explanation flimsy as it is, that the tendency of the females to become darker with each generation when not checked by skillful mating or when unskillfully mated is explained by the simple fact that the female of the first cross was so very dark, black in fact, and contrawise the males are comparatively light because the male of the first cross was light. This explanation (?) is so clear, direct and logical that it has been accepted by those of our breeders who demand explanations before they proceed with their work as so apparent as not to require proof. It has then become an axiom in their breeding code. Fortunately, it is the fact with which these easily satisfied persons dealt and must deal, rather than a supposition or a theory. In the minor details of plumage, or type characters, the people who accept this superficiality do not expect the male progeny to inherit all the qualities of the sire nor the female progeny to inherit all the characteristics of the dam. Instead, we have a case of mixed inheritance, the laws of which are so complicated and mystical that they defy comprehension, not to allude to an explanation.

Bishop's Explanation.—The nearest to an explanation of this phenomenon of light males and darker females which the writer has seen was offered by the Rev. D. D. Bishop, a breeder of both Barred Plymouths and Dominiques, nearly forty years ago. Yet that is hardly an explanation because the question why still remains unanswered. The fact that this phenomenon is characteristic in all Dominique colored fowls is, however, well brought out in the following paragraphs selected from the work referred to at the beginning of the paragraph, "The Plymouth Rock."

"The most important and striking characteristic that presents itself to a student of Plymouth Rocks is the peculiar difference in the color effect in the two sexes. First, last and always the males come lighter than the females. It is a thing we must never forget in dealing with this breed. It will beat us if we do but we shall never beat that. It is in the birds; it is the law of this color that the males will not only be several shades lighter in color, but the width of the bars will be about one-third of the light spaces between them. It is a very light pullet that has the space between the bars equal in width to the bars themselves, and from that the spaces grow less all the way down to no space at all, or solid color.

"The Dominique presents the same characteristics—in fact, the Plymouth Rock inherits this peculiarity, with its color, from the Dominique, and wherever you find the Dominique color, in Leghorns or anywhere else, you find the same law to govern. The observation of this law will be taken up in the chapter on breeding, so that I shall not follow it further at this time, but just here I will say that the fact must be accepted as a law and not regarded as a mere eccentricity. The color difference between the male and the female is really much less in the Dominique color than in many others. As soon as you get outside of the solid colors—as white and black—the utmost diversity is manifested. The tyro refuses to credit the statement that the Partridge Cochin cock and hen are of the same breed. The Dark Brahma shows as wide a difference between sexes, and what could be more unlike than the cocks and hens of the various Games and Pheasants, all the way to the songbirds as gaily light as the butterflies themselves?

"The law of variation between male and female is Nature's law, and not an eccentricity confined to this particular breed of fowls."

H. H. Stoddard, for years editor and publisher of the Poultry World, of Hartford, Conn., has written so interestingly on this topic of the difference in male and female color that we quote from his work, "The Plymouth Rocks," of 1880:

"Yet it may be doubted whether we ever can produce Plymouth Rocks that shall tend, invariably, to produce males as dark as the females, and females as light as the males. The old Black Java hen has been made too much of a scapegoat. There are, no doubt, instances in the animal kingdom where traits originally introduced through one sex tend to persist in that sex alone. But experiments in mating a Black Cochin cock to an average American Dominique hen and rearing the products of the cross for three generations have proved that the dark pigment still appeared chiefly in the pullets rather than in the cockerels. This might have been expected in advance, because analogy teaches it. **Nearly all our breeds whose plumage contains both light and dark feathers, or markings, naturally throw males whose color will average lighter than that of the females.** The hackle and saddle of the cock incline to be lighter than the corresponding portions of the hen and certain portions of his tail and wings contain relatively larger patches of white, which make his average color higher than

hers. For example, S. P. Hamburgs, S. S. Hamburgs and Colored Dorkings.

"Again, the Black Java cocks, like the Black Cochin males tend toward light or golden saddles and hackles and the American Dominique males are both lighter than the respective females and as the Plymouth Rocks are based on these two breeds, will the time ever come when our Plymouth Rocks will average of the same color in both sexes?"

It must be admitted that there appears to be considerable truth in these lines of reasoning that both Bishop and Stoddard pursued. Certainly many other examples could be added to those given; yet it can not be conceded to be a law of nature that is applicable to all varieties of our Standard bred fowls.

The Sexes Must Match in Color.—If all this be so, why not accept the light males and the dark females? Why adopt expediencies to obviate this difficulty which is unnatural to the fowl itself?

In the first place, the American Standard of Perfection is the guide for the showroom and the requirements found therein gives one description for the color of both sexes. This means that males and females, for exhibition, must match in color. Then, why have a Standard with such requirements? Frankly, for one reason, if no other, the light males and dark females are not admired by the public, the breeders, the exhibitors or the judges; and upon the latter the breeder is dependent for his publicity.

Advantages of Two Matings.—Again, the same female in any mating of parti-colored varieties is never the dam of both the best cockerel and the best pullet. This fact being true, the advantage of a double-mating, or of making two special matings, one designed to produce exhibition males and the other to produce high-class exhibition females, should be at once recognized.

It lies in the fact that by mating exhibition colored males to the daughters of exhibition colored males, males that are of exhibition color are produced. Exhibition females are produced by just as simple a process. The sons of exhibition colored females are mated to exhibition colored females and females of exhibition color are thereby produced. This simplifies very much the task of producing exhibition color because we may depend upon the system of mating to accomplish our purpose. The skillful adjustments of balancing the influence of the male and

of each individual female upon the color of the progeny is not nearly as necessary as when the single or standard mating is used. Further than that, we may rely upon the quality of the males very largely to determine the quality of the male progeny. Outside of her ancestry, the appearance of the female of the male line as to plumage becomes of secondary importance under the double-mating system; exactly so with the male of the exhibition female line.

These principles and facts must be ever coupled with those one step in advance, namely—the higher the quality of the parents, the higher that of the offspring; other things, of course, being equal; the more generations that quality has been maintained, the more certain and often it will reproduce itself.

Special Matings an Old and Established Institution.—Double-mating could be and should be called "special mating," because this term indicates accurately just what it is designed to be and should be. Double-matings are special matings for each sex. As such they become old and established institutions, as long before the term "double-mating" was used, special matings to overcome the difficulty of breeding males and females of the same shade were employed. Descriptions of such matings are found in most, if not all, the works on Plymouth Rocks.

The stage to which thought upon this question had advanced at this time (1880) is very well illuminated by Stoddard in the following paragraphs:

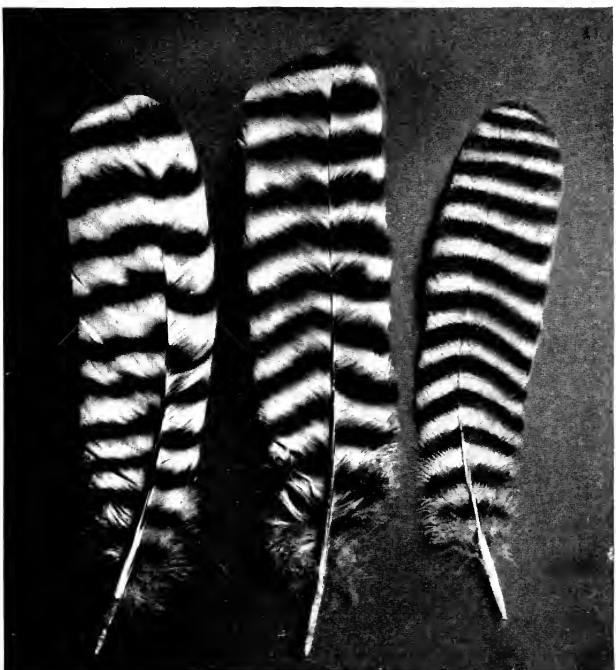
"* * * That the breed will ever arrive at that stage where the males will be naturally produced as dark as the females we very much doubt and till that time arrives we must make the best of things as we find them, and at the same time try to bring about that state of things as well as we know how.

"At present and ever since the breed was known the males have 'run light' and the hens dark. That is, in every yard of Plymouth Rocks the fowls are found varying in color, both cocks and hens. Among the former a very few are what would be called dark, a considerable number medium, and a large number light, or very light, so that they may be called light as a rule. The hens are in greatly preponderating numbers, very dark, a few lighter and a very few what may be called light, or about the same as a dark-medium cockerel.

"These light pullets and dark-medium cockerels match in the pen, and from them are selected the exhibition birds. They

THREE DEGREES OF QUALITY IN COLOR AND BARRING ON TAIL PROPER, BARRED PLYMOUTH ROCK MALE

PLATE 33

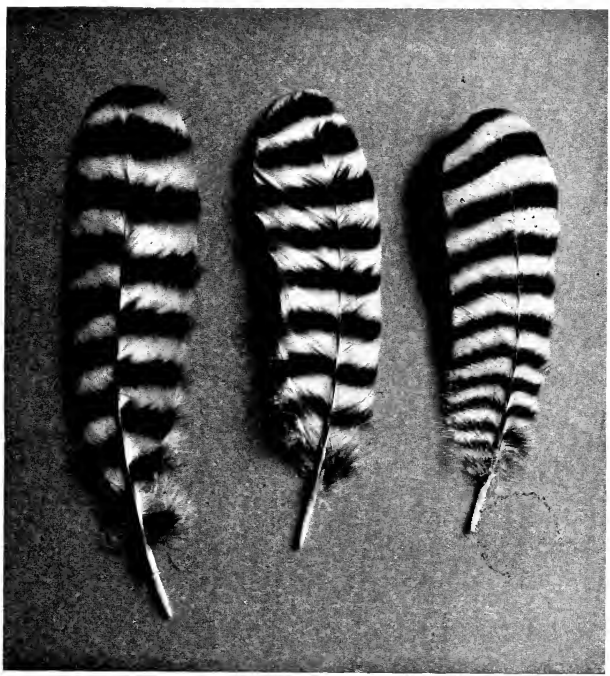


1 2 3

1—Ordinary. 2—Very Good. 3—Idealized.

THREE DEGREES OF QUALITY IN COLOR AND BARRING ON TAIL PROPER, BARRED PLYMOUTH ROCK FEMALE

PLATE 34



1 2 3

1—Ordinary. 2—Very Good. 3—Idealized.

N. C. State College

are desirable, but few; being few they are in great demand. Breeders wish to mate their stock in such manner as to produce the greatest number of these light-colored pullets. Every year in which the lightest colored pullets are used successfully tends to fix a lighter shade on the female side. The light-colored cockerel and the black hen draw in opposite directions. Can the Plymouth Rocks be so changed by breeding as to approximate, and finally draw together? Perhaps so and perhaps not. It can only be accomplished, if at all, by patience and effort in the right direction. It never will be done by persistently using a light cock. The change must be gradual."

These paragraphs set forth clearly the work that the Barred Plymouth Rock breeders had before them as well as supplying a description of the tools with which they had to work. Stoddard gives us further information by describing the three matings which he considers necessary to accomplish the objects of the Barred Plymouth Rock breeders.

"It will be advisable for the breeder to make three matings. In the first place, all the lightest cockerels and all the darkest pullets should be rejected as unfit to breed. Then much attention should be given to the color of the legs. It is very important that a breeding cockerel should have not only legs yellow, but very yellow legs. The pullets at first cannot be found in considerable numbers with pure yellow legs, but after culling out all that show glaring imperfections and those very light or very dark, take of the remainder those pullets that are the darkest and mate them with one of the lightest cockerels not near akin. This mating will not produce exhibition cockerels, and the majority of the pullets will be about the color of the dam—the lightest will be useful.

"Then take those pullets a few shades lighter than those of the first mating and mate them with a medium-colored cockerel. This mating will produce a good per cent of standard chicks more especially cockerels.

"Lastly, place the lightest-colored pullets with a dark-medium cockerel. In this mating the sexes are nearly of one color. Every breeder should make such a mating as this every year. We have conversed with many breeders who have made this practice without getting black chicks, but just so sure as the thing is overdone and you use too dark a cock in the breeding pen you will have a lot of pullets as black as crows, with green-black legs. The whole season's produce may be easily ruined in

this way. The matter of extreme colors should be discontinued entirely as soon as may be, and the breeder should have in view the bringing about of a uniformity of color in the sexes."

The reader will understand from the following paragraphs that Stoddard, presumably echoing the voice of the Barred Plymouth Rock breeders, advocates a special mating to produce exhibition colored cockerels; and a special mating to produce exhibition pullets; yet he does not abandon the idea of producing Standard colored chicks of both sexes from one mating. This, indeed, seemed to have been the idea for a time. Single or standard matings were maintained each year with the expectation that by persistently mating together the males and the females nearest to standard color, that were produced from one mating, standard colored specimens of both sexes could be produced from the same mating. For their immediate requirements, however, breeders indulged in special matings for the sex. This general plan was pursued for a number of years. The idea of producing the best or nearest to standard colored specimens from one mating was not given up generally until about the beginning of this century. At the present time there are probab'y those who have not given up the idea that this feat may be accomplished, but in face of the almost universal use of and quite universal success of specimens produced by the double mating system at poultry exhibitions all over the land they are surely very quiet about their practices.

Other forms of matings were advocated which from the description given we may without hesitation pronounce special matings.

In Plymouth Rocks (Corbin, 1879), we find five systems and from their nature, it surely would seem as though standard colored birds would result from some of them.

"Five different matings have been advocated and practiced as follows:

"No. 1—A male, light in color, mated to dark females.

"No. 2—A male, dark in color, mated to light females.

"No. 3—A male, dark in color, mated to dark females.

"No. 4—Birds matching in the show-pens.

"No. 5—A female medium in color, mated with a male about two points or shades lighter in color.

"There should be but one mating necessary. That for exhibition should be precisely the same as that for breeding. The

trouble and annoyance of being obliged to have two different styles of mating is obvious to any one, and it utterly befogs amateurs.

"There is no necessity for this. The best mating for breeding purposes is that of No. 5, and this is or should be the same as No. 4. Mating No. 1 is urged by many as the proper one; and where a beginner has no really suitable birds, and does not feel able to pay the prices demanded for the finest ones, he will do very well with fine bred stock mated in this way; that is, he will obtain a certain percentage of the progeny fitted for a proper mating the next season.

"But where you have already obtained the desired medium by careful breeding, it is worse than useless to again return to the extremes and expect more favorable results. Mating No. 2 is objectionable, and should not be practiced, except as a necessity to utilize stock, and even then seldom proves satisfactory. Mating No. 3 should never be made use of; as the pullets from such a mating would run from very dark to black, while the cockerels would be splashed with black or too dark either for the breeding or show-pen. Possibly a few cockerels could be obtained fit to be exhibited, but they would not be suitable to use as breeders, and their proportion would be very small.

"It is impossible also to obtain by this mating any number of chicks having the required yellow legs and beaks. They will invariably have legs either dark or spotted. This is a disqualification in exhibition birds, and, of course, destroys all but their economic value.

"If birds exactly alike could always be bred from, or if the mingling of like elements always produced the same results, there would be but little difficulty in breeding exhibition birds by the score; but such is not the fact."

No. 1, as stated by the author, was excusable when one had no better birds and no money to procure them. All will agree with him. Females come too dark, males too light; yet mate the culls together. One method; yes, the poorest that can be thought of.

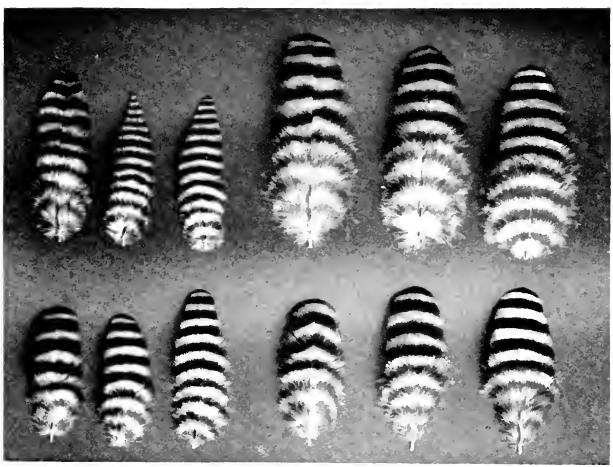
No. 2 is an evidently desperate method to secure Standard colored specimens of both sex.

The author condemns, in toto, number three. Yet, by this method of mating, the rich and beautiful males of the present day are produced and more than that, it was by this method—

PLUMAGE SHOWING THREE DEGREES OF QUALITY, COLOR AND BARRING ON WING-BOW AND WING-BAR OR COVERTS OF BARRED PLYMOUTH ROCK

PLATE 35

1 2 3 4 5 6



7 8 9 10 11 12

Upper Row: Male—Wing-Bow. 1—Ordinary, 2—Very Good, 3—Idealized; Wing-Bar or Wing-Coverts, 4—Ordinary, 5—Very Good, 6—Idealized.

Lower Row: Female Wing-Bow. 7—Ordinary, 8—Very Good, 9—Idealized; Wing-Bar or Wing-Coverts, 10—Ordinary, 11—Very Good, 12—Idealized.

practiced without interruption for years—that they have been developed.

Mating number five, by which the excellent females of the present day have been produced is also criticized severely with the statement, "This is or should be the same as number four," a Standard mating which is and always has been a most pronounced failure from the beginning in producing exhibition birds of either sex.

One fact that these quotations from the early works does bring out clearly is the importance placed upon breeding Plymouth Rocks with clear yellow legs. Breeders of the present day are fully aware of the fact that color cannot be bred entirely out of the shanks and toes and still bred in the feather in all its intensity and beauty.

The quotations preceding serve one good purpose, that of giving quite an adequate conception of the many and varied methods and systems resorted to in order to breed males and females that matched in color. One by one they prove themselves worthless. All that survive are number three and number five, according to Corbett, and these are exactly what we are using today, known as the double-mating system, one mating to produce exhibition males and one to produce exhibition females.

CHAPTER II.

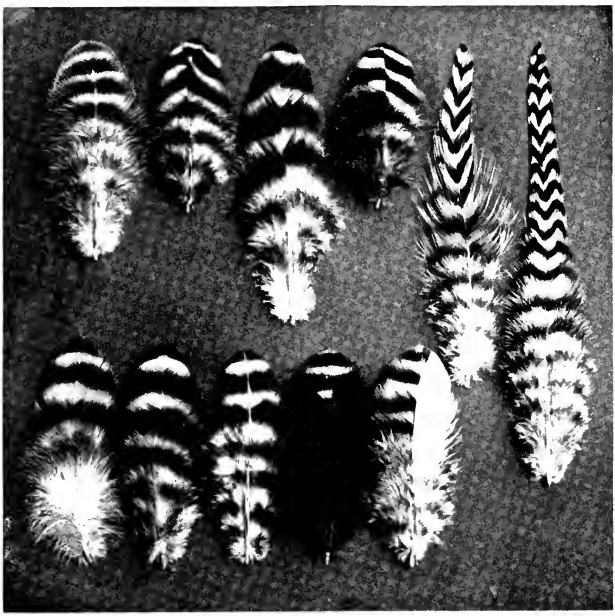
MATINGS TO PRODUCE EXHIBITION MALES

Matings for this purpose are popularly called cockerel matings and consist of cockerel-bred males and females, so-called. A cockerel-bred male is an exhibition male, or at least one of exhibition or standard color. (In accepting this definition or rule the reader must allow two exceptions or modifications; first, that the term standard color must have general rather than special application—that is, some range of shades must be allowed; second, males bred from strictly cockerel matings would be classed as cockerel-bred. In some cases males considerably lighter and in other cases males very much darker than Standard are produced from matings that are of the cockerel line.)

A cockerel-bred female is the daughter of an exhibition or standard colored male.

DEFECTS IN BARRING OF PLUMAGE
PLATE 36

1 2 3 4 5 6



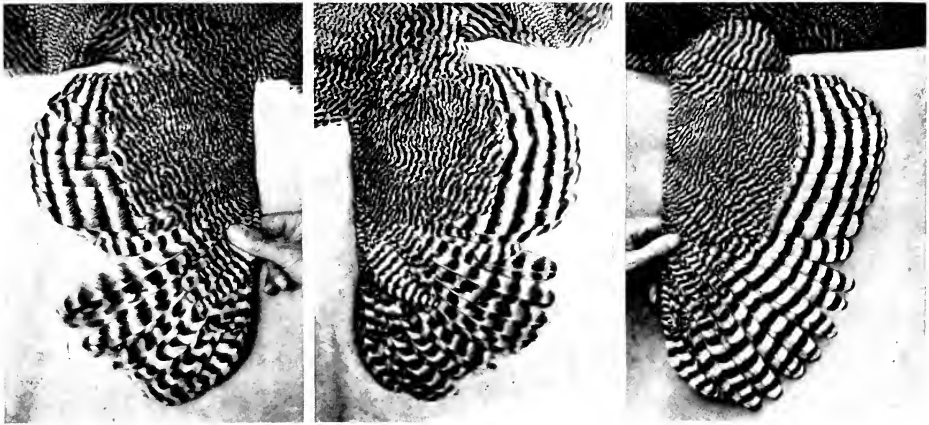
7 8 9 10 11

Upper Row: 1—Bars: Weak at tip and sides; crescent shaped; light quill. 2—Very irregular; bars join at quill; bars turn backward at sides like inverted V ($\wedge$). 3—Barring coarse, smirched badly. 4—Two sides of web dissimilar, barring irregular in extreme; light bar joints dark bar at quill, mis-matched barring. 5—Barring extremely V shaped. 6—Barring M shaped toward sides.

Lower Row: 7—Barring too coarse; bars too few; undercolor lacks barring. 8—Dark bars wider at sides and joined at edges of feather. 9—Quill white through the dark bars; light and dark bars run together. 10—All but part of bars near tip end, black. 11—White on most all of one side of web. (Much worse fault than black in barred plumage.)

THREE DEGREES OF QUALITY IN COLOR AND BARRING ON WINGS OF BARRED PLYMOUTH ROCK MALES

PLATE 37



1 2 3

1—Ordinary. 2—Very Good. 3—Idealized

THREE DEGREES OF QUALITY IN COLOR AND BARRING ON WINGS OF BARRED PLYMOUTH ROCK FEMALES
PLATE 38

1 2 3

1—Ordinary. 2—Very Good. 3—Idealized

Note—Besides the point brought out by the above and nine preceding illustration plates, the reader may observe the close uniformity in markings between male and female barred plumage; further, that as perfection in the plumage of each sex is approached the greater the resemblance in the plumage of the sexes.

The Cockerel-Bred Males.—These, as stated, are standard colored and are sons of standard colored sires and their dams are daughters of standard colored males. Males from these matings vary in shade of color somewhat. Some will come too light to be classed as standard colored, while some will be too dark to pass standard requirements. The former, because males are inclined to breed too light, are worth little or nothing as breeders for exhibition males.

Too Light Males.—They are too light generally because the dark bars are not dark enough or wide enough to create the intensity required of standard colored males, or because the light bars are too wide which is, however, making about the same statement as that the dark bars are not wide enough.

Too Dark Males.—The over-strong colored male, that is, the one that is too dark for a first class exhibition specimen, is useful as a breeder, sometimes extremely useful. The male may be too strongly colored because of one or more of the following faults. The dark bar may be too wide or "heavy," as it is called. A dark bar much wider than the light bar is frequently seen in cockerel-bred males and is not considered a serious fault because of the real need of extra color in breeding males of the male line. A breeder-exhibitor must bear in mind that this is the real purpose of a cockerel-bred male which has dark bars of this description, but that such a male is not of the very highest exhibition quality. The dark bar may be too intensely dark, in which case it has a gloss known among breeders as "sheen." Usually this is a lustre of greenish shade. This is not desirable, though when only faintly visible in certain sections, counts very little against the specimen possessing it, and may add to its breeding value with females of certain descriptions.

The light bar may be, and very likely is, too narrow as measured by Standard requirements. It may also be too dark. By that is meant—not a clear, grayish white. Light bars may be smoky, that is, mixed with dark pigment, thus creating a slaty shade. It may have a brownish tinge which gives the specimen a rusty color, especially noticeable if the dark bar also has a brownish tinge.

Every cockerel-bred male that is to be mated or that is being considered for a breeder should be examined to determine how he deviates from standard color and how much; that is, in which direction—is he too light or is he too dark—what makes him so? The correct answer is comparatively easy to find if you are

observing and patiently studious. When the cause of deviation from standard color is determined, it must be kept in mind during the mating process, for females that have faults of the same character should not be selected as mates.

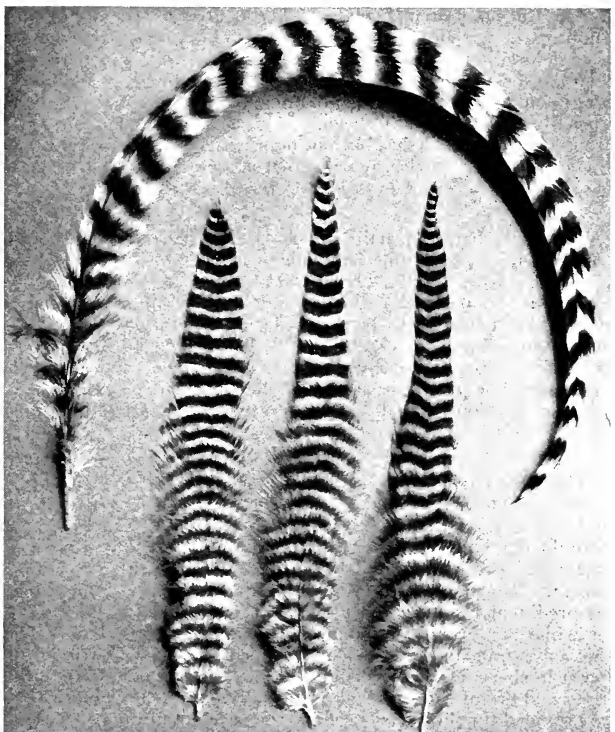
The Cockerel-Bred Females.—These are, if true to name, daughters of exhibition-colored males. They differ from exhibition-colored females only in color; they are darker—often very much darker. Upon analysis, the dark bar is found to be much more intensely dark. Greenish lustre appears occasionally, which is usually referred to as "sheen." This is an objectionable feature in exhibition females, but not necessarily so in cockerel-bred females; for many males, females that possess a dark bar of that character are necessary in order to breed high class males.

The dark bar is usually much wider than the light bar, usually twice as wide and sometimes as much as three times as wide. This feature differs from the requirements for exhibition females in this particular, but inasmuch as the light bar of the males has a tendency to be too wide, this quality is desired in cockerel-breeding females. The dark bar should be strong and there should be a sharp definition between the dark and the light bars. This line of definition will not be as sharp as in the plumage of exhibition-colored females because the contrast in color between the two bars is not as sharp.

The light bar, as it appears in plumage of the cockerel-bred female, is not as wide, being, as the reader will conclude from the foregoing, only one-half or one-third as wide. Furthermore, the light bar is not as clear as in the plumage of the exhibition female and it is not desired that it be so, for the reason stated repeatedly that males are prone to come too light. Some cockerel-bred females do show a very clean-cut barring, the light bar while narrow, is bright and clean and the dark bar, while wide and strong in color, has well defined edges and is free from greenish sheen and brownish shades. Such females are very pretty and are of the sort that are usually exhibited when classes are provided for them. As breeders, they are not always a success. That depends upon how they are mated. If mated to males that are very strong in surface color as well as in underbarring, good results should be expected and often will be realized. They would be particularly well mated to males whose plumage showed rusty or brownish tinges or salty light bars. If we

SICKLE AND LARGER TAIL COVERTS, BARRED PLYMOUTH ROCK MALE

PLATE 39

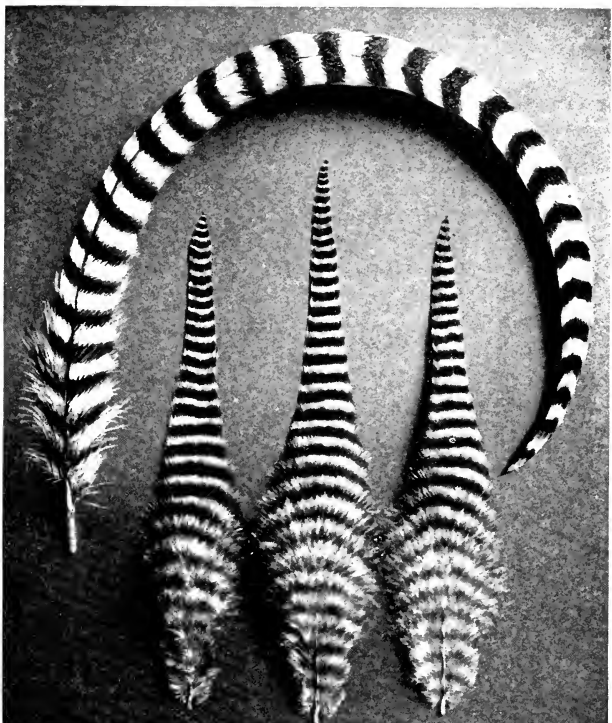


Sickle—Very Good

Three Larger Tail Coverts—Very Good

SICKLE AND LARGER TAIL COVERTS, BARRED PLYMOUTH ROCK MALE

PLATE 40

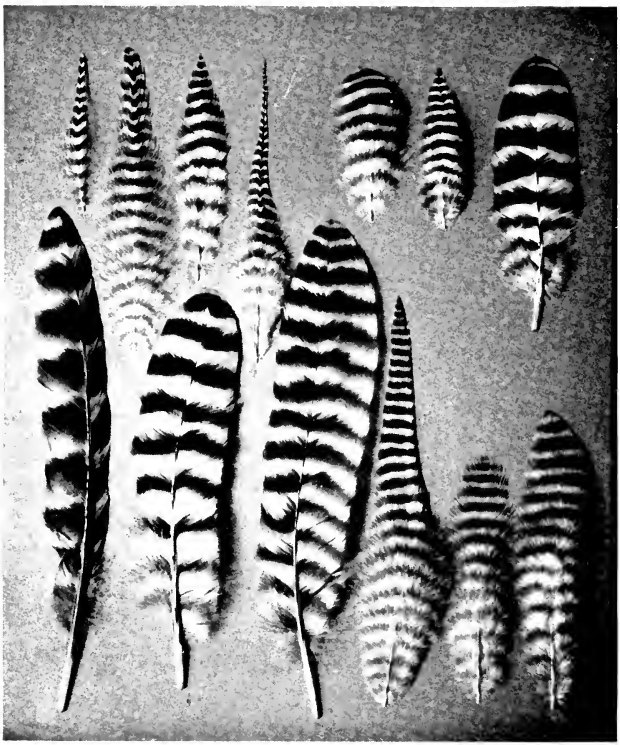


Sickle—Idealized

Three Larger Tail Coverts—Ideal (natural)

BREEDING FOR EXHIBITION COLOR IN MALES
PLATE 41

1 2 3 4 5 6 7

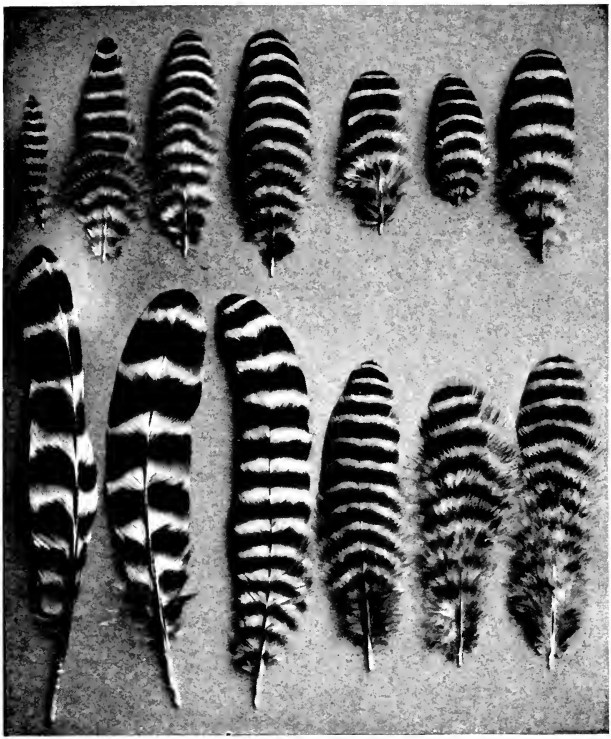


8 9 10 11 12 13

Specimen feathers from 1—Head. 2—Neck. 3—Back. 4—Saddle. 5—Breast. 6—Wing-bow. 7—Wing-bar. 8—Wing primary. 9—Wing secondary. 10—Tail proper. 11—Tail covert. 12, 13—Rear body, often called fluff, showing color of male used to produce high quality exhibition Barred Plymouth Rock Males.

BREEDING MALES OF EXHIBITION COLOR
PLATE 42

1 2 3 4 5 6 7



8 9 10 11 12 13

Specimen feathers from 1—Head. 2—Neck. 3—Back, between shoulders. 4—Cushions. 5—Breast. 6—Wing-bow. 7—Wing-covert. 8—Primary. 9—Secondary. 10—Main tail. 11—Smaller tail-covert. 12, 13—Two from rear body, often called fluff, showing high color markings of female used to produce high quality exhibition Barred Plymouth Rock males.

want to breed males that are rich colored or deep blue in general appearance, it is not desirable that the birds of both sexes should have absolutely clear, light bars in their plumage, but it is advisable that it should be present in one side of the mating.

Selecting the Male.—Standard colored males are placed at the head of all matings intended to produce exhibition males. The nearer they are to perfection in form, color and markings, the more valuable they are as sires of exhibition males. This statement holds with the single exception of shade of color. In that particular, a male that has a slight tendency towards an overly strong shade, is, in other words, inclined to be too dark or has an overly strong, dark bar, should be given the preference for females whose dark bar shows little or no sheen. A male of the same description should be selected for females that have the clean, light bar. As a mate for females with plumage of this description, males that have rich blue appearance, together with the strong, dark bar, should be selected.

Close attention to the type of barring is necessary. Those males that have the straight-across-the-feather bar with little tendency to show the V-shaped bar comply with standard requirements and are very valuable assets in any breeder's yards. The breeding of this type of barring in male plumage is one of the ambitions of the Barred Rock breeders that is not fully realized as yet.

The Undercolor.—The underbarring is a feature that must be made a matter of moment. The strength of this feature is an indication of the breeding strength of the male. Underbarring should be strong in all sections. Do not fail to examine critically these sections for this characteristic: Neck, back its entire length, wing bows, and insist that the bars extend to the skin. This should be true also of the breast and as nearly true of the long, rear body feathers as possible. The straighter and clearer these underbars of a male are, the better he is, both as an exhibition specimen and as a breeder.

The Surface Color.—Evenness of surface color is one of the first essentials of good exhibition male and it is just as essential in a breeding male.

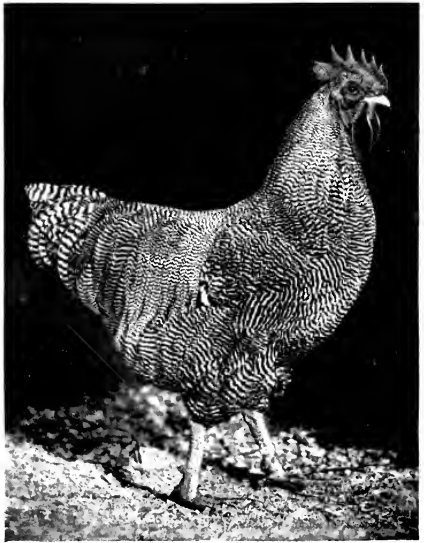
For females that are otherwise very good but are too light in the neck, males that are very strong in barring of this section and even in color of all sections are very desirable. For females that are extremely dark, that is, dark to a point where

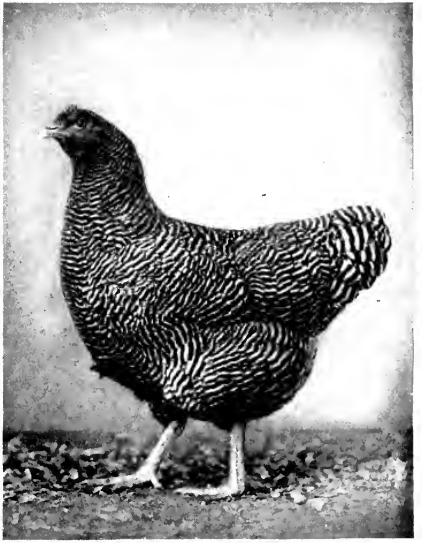
they appear "crocky," males that are even in all sections, clear in the light bar and free from rusty or brownish dark bars, are necessary for good results. If the breeder can go one step further and insist upon sharply defined as well as clear bars when selecting the male, he will be still more fortunate. When mating females of the above description, the back and shoulders of the male are the sections to examine especially closely.

Selecting the Females.—The first thing to consider in selecting the females to produce exhibition males is their ancestry. They should be daughters of high class exhibition males and, if possible, the sisters of high class exhibition males. Two facts besides their individuality, which are highly indicative of their quality as producers of desirable males are: First, the length of the line from which they come or the number of generations of high class, exhibition males which precede them in their ancestry and, second, the quality of these male ancestors. The value as a producer of any cockerel-bred female will depend upon the number of generations and the quality of high class male ancestors. The value of a female will be indicated most clearly by her individuality; that is, to a breeder with experience in producing high class males, and by the quality of her own brothers. The merits and defects of these own brothers, particularly those of her own age, furnish strong clues as to how to mate a cockerel-bred female. Furthermore, as it is a recognized fact that, though several cockerel-bred females may be full sisters, they are not identical, the question comes up as to which to select. Referring to the above description, it is not essential that cockerel-bred females should have clear, yellow shanks and toes, as the shanks and toes of the males are usually yellow even when those of their dams and sisters show considerable dark color. The same is true as to color of beaks of cockerel-bred males and females.

The Wing Section.—The flights of the cockerel-bred females need not be as clearly marked as those of an exhibition female, because from females with flights that show but suggestions of markings, that is, that are but indistinctly marked, come males with splendidly marked flights.

The secondaries of cockerel-bred males should not only be distinctly barred, but the bars in each feather should be so placed that when the wing is folded, they will form distinct lines across the wing-bay. This is a very pretty feature of a Barred Plym-





Male and female, Barred Plymouth Rocks, of exhibition male line as mated to produce males of exhibition shape and color. (This male twice a winner of first at Madison Square Garden, N. Y.)

outh Rock wing and, as a rule, there is no difficulty in breeding it to an approximate state of perfection.

The markings of the shoulders, wing-fronts and wing-bows partake of the nature of those of the back, breast and rear body.

The Undercolor.—The underbarring of the cockerel-bred female should be very strong, clear and distinct. The light bar, of course, will not be as clear as that of the exhibition co'ored female, but the dark bar is so much stronger that we obtain very distinct underbarring in the best selected cockerel-bred females. This, of course, is very desirable because of the necessity for underbarring in our exhibition males, which it is impossible to secure without strong underbarring on both sides of the mating.

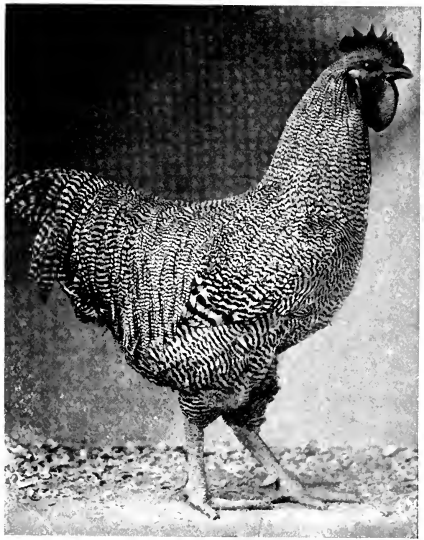
The alternate bars of light and dark should color the shaft as well as the fluff of the feather. Very often the dark bars particularly stop at the quill. This is an indication of weak and irregular barring. The males bred from such females will not show the strength and regularity in barring that exhibitors desire.

The Tail.—The larger the feathers, the coarser is the barring. Constant observation teaches us that this feature of barred p'umage is natural. Bars that are comparatively narrow, straight, clean and sharply defined are desired just as much in this as in any section. A slight amount of greenish sheen is not objectionable in either sex, because this section is fully as much inclined to weakness in color as any section of the male plumage.

CHAPTER III.

MATINGS TO PRODUCE EXHIBITION FEMALES

Matings for this purpose are popularly called pullet-matings and consist of pullet-bred males and females, so-called. A pullet-bred male is a son of an exhibition female, or at least, one of exhibition or standard color. (In accepting this definition or rule, the reader must allow two exceptions or modifications: first, that the term "standard color" must have general rather than special application—that is, some range of shades must be allowed; second, males bred from strictly pullet-matings would be classed as pullet-bred. In all cases, males considerably lighter than Standard are produced from matings that are of the pullet-line.)

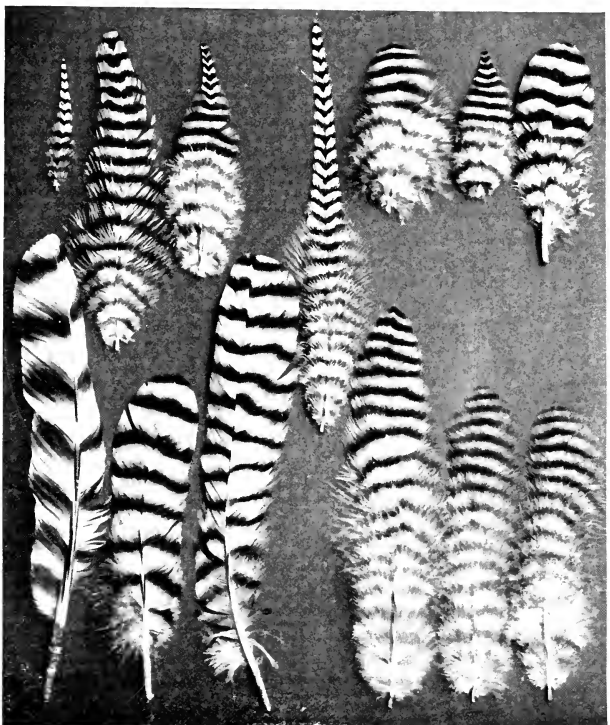


Male and female, Barred Plymouth Rock, of exhibition female line and as mated to produce females of exhibition shape and color.

This female is dam of winning New York pullets for four seasons.

BREEDING FOR FEMALES OF EXHIBITION COLOR
PLATE 45

1 2 3 4 5 6 7



8 9 10 11 12 13

Specimen feathers from 1—Head. 2—Neck. 3—Back. 4—Saddle. 5—Breast. 6—Wing-bow. 7—Wing-coverts. 8—Primary. 9—Secondary. 10—Main tail. 11—Lower breast. 12, 13—Rear body, often called fluff, showing color markings of male used to produce high quality exhibition Barred Plymouth Rock females.

A pullet-bred male is the son of an exhibition or standard colored female.

The Pullet-Bred Males.—These are lighter than standard colored males and are sons of standard colored females.

Sons of good exhibition females are the diametric opposites of daughters of exhibition males. The sons are invariably much lighter in surface color than exhibition males; the light bars are broader than the dark (Plate 45), giving the bird a much more openly barred appearance than the exhibition male presents.

The legs and beak are usually a much deeper and clearer yellow. The underbarring is not as strong and does not often extend to the end of the feathers nearest the skin.

The aim of the breeders with the most advanced ideas is, however, to produce exhibition females with light and dark bars of even width, but both quite narrow (Plate 46). In doing so, the sons of such females have quite naturally become more narrowly barred as their dams improved in Standard requirements or met these advanced ideas. The result is that we have today much more presentable males in our female lines than were found some years ago, though they do not yet reach the ideals required of an exhibition male.

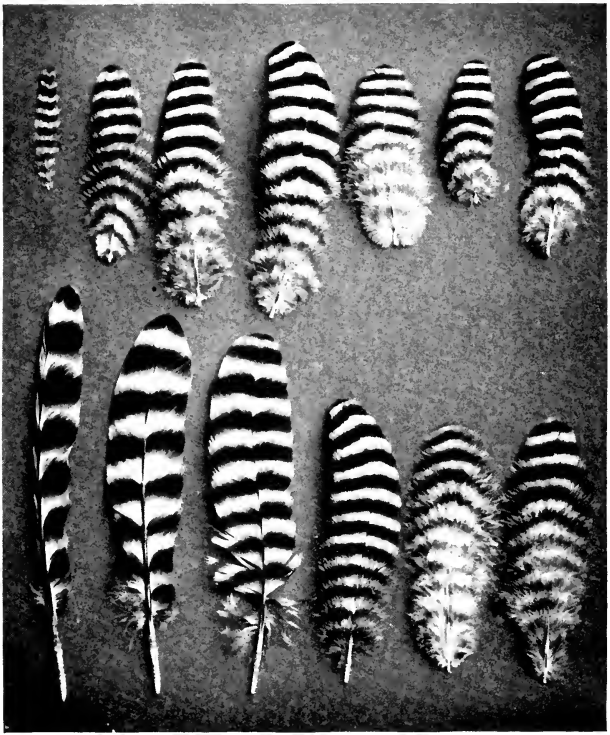
Selecting a Male to Produce Exhibition Females.—If capable of producing females which breeders, exhibitors and judges desire at the present time, an ideal male for pullet matings must possess barring of nearly equal width, evenly spaced over a large portion of the feather, be evenly colored on the surface and not weak in neck or breast, as they are likely to be. They should have well-marked secondaries, as these show beautifully on the females if the barring on each feather is properly placed, so that they overlap and run parallel to one another.

A good wing-bay will often show these clear, distinct bars. The flights of the male should also be distinctly marked, with the black markings predominating, but the white should be quite clear and the black very strong, stopping short of a lustre, however.

Males whose dams are nearly ideal exhibition specimens, when mated to splendid exhibition females, seldom fail to produce a fair proportion of exhibition females. Some are, however, much better producers than others. There is a tendency for the light bars to become cloudy or indistinct and the finer the bars become, the greater this tendency. To obviate this

BREEDING FEMALES OF EXHIBITION COLOR
PLATE 46

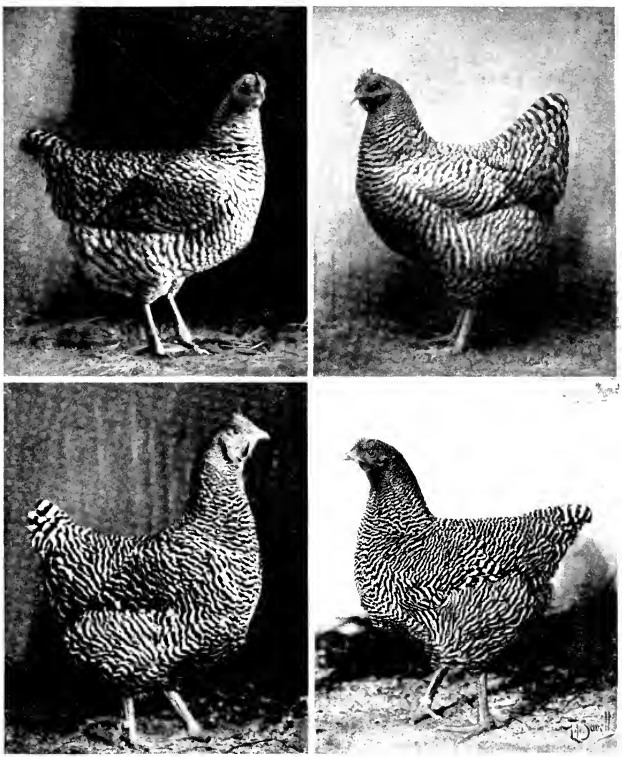
1 2 3 4 5 6 7



8 9 10 11 12 13

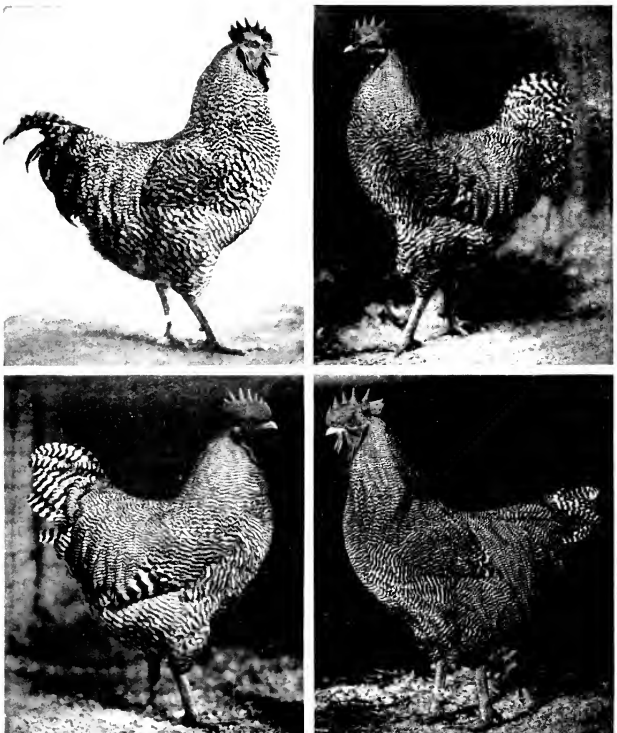
Specimen feathers from 1—Head. 2—Neck. 3—Back near shoulders. 4—Back at cushion. 5—Breast. 6—Wing-bow. 7—Wing-covert. 8—Primary. 9—Secondary. 10—Main tail. 11—Smaller tail-covert. 12, 13—Rear-body, often called fluff, showing color markings of female used to produce high quality exhibition Barred Plymouth Rock females.

PLATE 47



Illustrating the progress of Barred Plymouth Rock females during the past twenty years. Four prominent winning females, separated by periods of about five years.

PLATE 48



Illustrating the progress of Barred Plymouth Rock males during the past twenty years, four prominent winning males, separated by periods of about five years beginning with 1898 Boston winner.

trouble, be sure that the light bars of particularly finely barred males are extremely clear.

Females to Produce Exhibition Females.—The ideal females for the production of exhibition females are ideal exhibition females; but in practice the uncertainties in breeding are such that this does not always work out. Females that are not themselves the very best of exhibition specimens are often the dams of very high class, winning specimens. Such dams, however, possess many of the attributes of winning specimens and, as a rule, require only a little alteration to become very attractive fowls. As an instance, females whose plumage may be a little coarse in barring, lack an underbar or so, whose feathers are improperly tipped, need but to be properly mated to produce progeny the equal of any. A finely barred male that is, at the same time, the son of an excellent female, is probably all that is required for the coarsely barred female with the desired contrast in colors, the well-defined bars, the strength of underbarring, the wing markings described in the Standard, to produce exhibition females of high quality. A female with too strong a dark bar can be easily mated to correct that fault, and if she is highly meritorious otherwise, her progeny should equal the best. So we might give instance after instance, but after all it is but a matter of breeding generation after generation from first class birds, and of corrective matings, as both these principles must be applied and with the skill born of good judgment and constant and careful discriminating observation.

SECTION III.

CHAPTER I.

WHITE PLYMOUTH ROCKS

THE ORIGIN AND EARLY DEVELOPMENT

FROM the first, White Plymouth Rocks came as white chicks from Barred Plymouth Rock parents. This departure from the general appearance, expected according to the laws of heredity, has been variously explained.

THEORETICAL EXPLANATIONS

Atavism.—One claim is that it is due to a phenomenon known as "atavism." This phenomenon consists in the recurrence in a descendant of characters that were possessed by a remote ancestor, instead of characters found in an immediate or near ancestor. The word is derived from the Latin atavus, which originally meant the father of a great-great-grandfather, but which was later applied to any remote ancestor. This tendency of ancestral characters to reappear in offspring, either immediately or after laying dormant for several generations, is due to a mysterious vital principle known as heredity. If the qualities appear after a long dormancy, the heredity is atavistic. Atavism implies that the recurring characteristics were actually found in a remote ancestor or in several of them; otherwise, their appearance would not be a manifestation of heredity, but of an effort without a cause—an "absolute commencement."

Possible Influence of Black Fowls.—However, in the attempts to account for white chicks from Barred Plymouth Rocks, other theories have been propounded. It was even suggested that they resulted from the influence of Black Java or Black Cochin whichever may have been ancestors. This theory, however, is in contravention of the well known laws of heredity; unless, indeed, it is a case of atavism from a white ancestor far back along the line of descent of the Black Javas or Cochins.

The Influence of White Fowls.—Another explanation is that white fowls known as Birminghams were the determining factor,

upon the supposition that they had been bred into one strain, at least, of Barred Plymouth Rocks.

Edward Brown's Explanation.—Still another and quite reasonable explanation is that offered by Edward Brown in "Races of Domestic Poultry," page 153, as follows:

"This breed is a sport from the Barred variety. It is easily seen that a failure of pigments, so far as the black marks are concerned, would yield white plumaged fowls, and wherever we have the mixed markings, which is sometimes known by the term "cuckoo" there will occasionally be specimens which either show pure white on the one hand, or are entirely black. It is in this way that many of the varieties have been secured, and the tendency to variation is very great in every kind of poultry."

D. A. Upham's Statement.—The following facts would substantiate Mr. Brown's explanation. As first bred, Plymouth Rocks came with the males very light and females very dark in color. We have Mr. Upham's statement that most of the pullets of the Spaulding cross were black and all the cockerels grey, but that he succeeded in finding a certain number of grey pullets to go with a grey cockerel he selected.

Rev. D. D. Bishop in his book, "The Development of the Plymouth Rock," calls attention to the light males and darker females as "the law of Dominique color" and makes this statement:

"The most important and striking characteristic that presents itself to a student of Plymouth Rocks is the peculiar difference in the color effect in the two sexes. First, last and always the males come lighter than the females. It is a thing we must never forget in dealing with this breed. It will beat us if we do but we shall never beat that. It is in the birds, it is the law of this color that the males will not only be several shades lighter in color, but the width of the bars will be about one-third of the light spaces between them. It is a very light pullet that has the space between the bars equal in width to the bars themselves, and from that the spaces grow less all the way down to no space at all, or solid color."

The Editor's Experience and Observations.—Moreover, the fact that males from the same matings, even though the matings be restricted to pairs, are of much lighter shades than the females is known to all those who are in the least familiar with the characteristics of Barred Plymouth Rocks. This difference was, in the recollection of the writer, much greater in years past than

at the present time. It is, then, reasonable to suppose that in their endeavor to get the females lighter, which endeavor naturally followed where too dark females were in the majority and even black ones sometimes appeared, lighter and lighter matings were used. In fact, within the Editor's recollection, males nearly white in color were used by breeders in their efforts to produce exhibition pullets of the desired shade. The result was what might have been expected, a few white chicks.

As an instance of such an occurrence, a certain mating of Barred Plymouth Rocks made by the Editor in 1895 produced five white chicks, four cockerels and one pullet. During the season, following the advice of a prominent breeder, the male had been changed. No white chicks were produced by the first male, a much darker one than the second, which was very coarsely barred and very light colored. The year previous, the writer saw three white sports in the yards of Mr. D. J. Lambet, of Rhode Island, well known as a breeder of Barred Plymouth Rocks exclusively. The same year another prominent breeder won first, fourth and fifth on White Plymouth Rock cockerels which he said were sports from his Barred Plymouth Rock pullet matings. The Editor assisted him in showing these birds, and that they were found in the same flock or pen as the pullet breeding Barred Plymouth Rock males, he can attest. Furthermore, these sports were of the same strain as the five bred by the Editor. That white sports did occur from the lighter or pullet matings was well understood by the breeders of Barred and White varieties of that period. This much can be noted—all species or nearly all have produced an albino, some frequently, others very rarely. An albino from Barred Plymouth Rocks is, for that reason alone, not to be considered an improbability, even though a white ancestry is not proved.

FACTS ABOUT THE ORIGIN

The Originator.—The credit for having originated the White Plymouth Rocks has been accorded to Mr. Oscar F. Frost of Monmouth, Maine. This has been, perhaps, because he was the first to proclaim their appearance. Directly following his admission of their existence, other breeders began to report their presence in their flocks. One breeder in Indianapolis wrote to me prior to 1876, telling of the hatching of white chicks from Barred Plymouth Rocks. I went to see them and induced him,

N. C. State College

quite against his will, to mature and mate the white chicks. The greater part of all the white chicks obtained from the Barred Plymouth Rocks came from the Essex or Drake strains, originated through the union of several kinds of fowls.

An Early Account.—From "Barred and White Plymouth Rocks," by Joseph Wallace, 1888, we obtain in substance the following account of the foregoing occurrence. Mr. Frost received a pair of these White Plymouth Rocks (sports of Barred Plymouth Rocks) of a neighbor who was breeding the Essex strain of Barred Plymouth Rocks. These he bred the first year and according to several accounts he had a poor looking lot for some years, but finally succeeded in producing very fine flocks of fowls. According to some authorities quoted in that work, 1878 is the date that Mr. Frost started to breed them, though it is generally thought that white sports from Barred Plymouth Rocks had not been an infrequent occurrence. The same author pays this nice tribute to the new variety:

"The mind cannot conceive of a more handsome and appropriate companion for the Barred Plymouth Rock than the White Rock. Often in our boyhood days, while reading the stories of Sinbad, the Sailor, in the 'Arabian Nights' Entertainments,' we pictured to ourselves the size, strength and power of flight of that formidable and fortuitous bird, the White Roc, that was capable of lifting elephants from the plains, that rescued so many travelers, heroes, cast-aways and adventurers from the jaws of death, and carried them in its huge talons over seas and mountains to other lands, where pleasure, wealth and beauty awaited them. Little did we think then that the day would come in our time when the great White Rock of the western world would carry off thousands at a time, not in its talons, but in admiration of its grandeur, beauty and usefulness."

Clamor for Recognition.—Directly following the public announcement of the presence of these fowls, there was a persistent clamor for recognition as the originators of them, and for the right to name them. This claim was conceded to the person who could prove that he was the first to see and breed them. They were variously named White Plymouth Rocks, Puritans, Dirigos, and other names for the less important strains. The real strife for supremacy came when admission to the Standard of Perfec-

tion was sought for them. Then began their official existence, as told in the records of the proceedings of the Indianapolis meeting of the American Poultry Association, January, 1888.

RECOGNITION BY THE AMERICAN POULTRY ASSOCIATION

The Committee on New Breeds reported to the convention Wednesday morning, January 25, 1888, that they would recommend the admission of the White Wyandottes, White Plymouth Rocks, White Minorcas, White Javas and Dirigos. As to the fundamental difference between White Plymouth Rocks and Dirigos, George P. Coffin, of Freeport, Maine, writes as follows:

"Replying to your letter of May the 28th, would say the first White Plymouth Rocks that I knew of were those bred by Mr. Oscar F. Frost, Monmouth, Kennebec County, Maine, who is

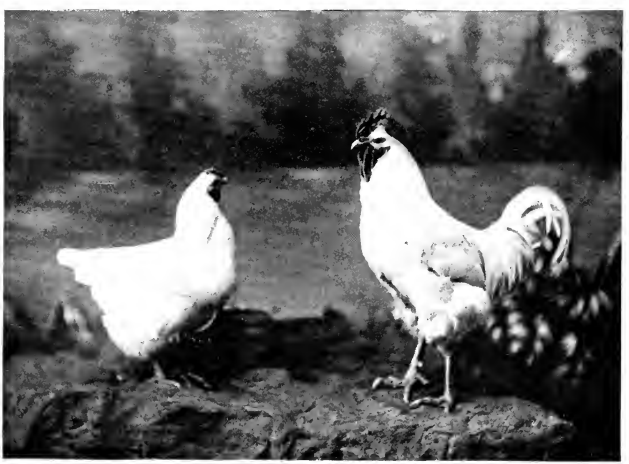


PLATE 49

ONE OF THE EARLIEST ILLUSTRATIONS OF WHITE PLYMOUTH ROCKS

generally considered the originator of the breed. As early as 1880 these were called White Plymouth Rocks, as I remember of my father having some of them when I was a small boy. While I am not positive about the matter, I incline to the belief that the Dirigo was the same strain of birds. The name, Dirgio, which is the motto on the State seal of Maine, would indicate the breed to be of Maine origin. At that time the idea of sports had not come to be understood and there were many of the breeders who doubted the sport origin of the breed. At the same time, as often occurs when a new breed is in the making, others besides the originator attempted by cross-breeding or in other ways to produce birds with similar characteristics, yet with different or partially different blood lines, and then, as sometimes happens, if these birds are bred with the originator's stock, it makes it much more difficult to trace the breed history."

Other breeds and varieties were included in that report, a little of which should be mentioned here. The presentation of five new varieties of white fowls for admission to the Standard was a matter of vital importance, and there was considerable opposition to the admission of the White Plymouth Rocks, the Dirigos, and the White Javas. This was because it was plain that there could not be so many kinds, all true to breed characteristics. Ultimately, White Wyandottes, Golden Wyandottes, White Plymouth Rocks, Jersey Blues, White and Black Minorcas and Pea-comb Plymouth Rocks were, all of them, admitted to the Standard under one resolution.

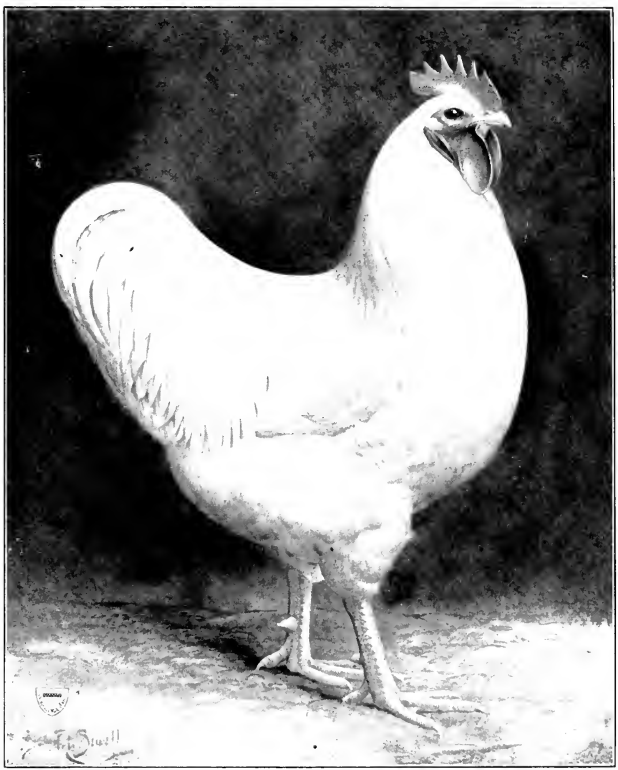
Later, a resolution was offered asking for the admission of the Dirigos to the Standard, although they were the same as the White Plymouth Rocks. A memorial was presented to the meeting demanding their admission, and great claims were made for their qualities. An argument developed the fact that Mr. Ferris had first shown these fowls in Bangor in 1875. They were judged and admitted to be the first White Plymouth Rocks ever shown. They came from the farm of Mr. Ferris, this being called Dirigo Farm. Mr. Beal, Mr. Ferris and others claimed the credit of originating the fowls and the right of naming them. An attempt was made to read the memorial. This, however, was denied and the document was never admitted to the records of the meeting. I now regret that it was not preserved, although at that time I objected to its admission to the record. It would doubtless reveal some interesting facts concerning the origin of this fowl.

The objection raised to the admission of all these fowls was that they had been shown as three separate breeds—White Plymouth Rocks, White Javas and Dirigos—whereas they were in reality three separate strains only. About the only difference between them was that the White Plymouth Rocks and Dirigos had yellow shanks; some of the Javas had shanks of willow color like those of the Game Fowls; still others had yellow shanks. By agreement, both the White Plymouth Rocks and the White Javas were admitted, the White Javas to be disqualified for shanks of any color but yellow. The White Plymouth Rocks were required to have yellow shanks. These disqualifications supplied a method for and influenced a speedy separation between the two. The White Plymouth Rocks have improved continually since their admission to the Standard, while the White Javas have become obsolete.

The Result of Recognition.—The admission of so many white varieties to the Standard of Perfection was the signal for unusual activity among those who bred white-plumaged fowls. This influence extended even to turkeys, ducks and geese. So much was written about them that many who had kept or were keeping other fowls forsook them, and turned to the breeding of white-plumaged fowls. The advocates of the White Plymouth Rock were so ardent and so apt in presenting the merits of that variety to the public that there was a general reaction in favor of them During the years that followed, many efforts were made in behalf of other varieties, but in the melting pot of public opinion, the White Plymouth Rock has continued to gain until its true value is recognized in every land.

It is certainly true that there is no one best breed or variety of fowls; the best for all is the kind best suited to the needs and pleasure of the one who selects them. The real quality of any breed or variety has been, and will continue to be, built up by the energy and skill of those who breed it. Those who have chosen the White Plymouth Rock have chosen well. They have succeeded in satisfying their ambition as well as in gaining the favor of the general public. However, no one breed or variety ever gains unchallenged supremacy, although the White Plymouth Rock has become a favorite as a fowl for exhibition, for table purposes, and for profitable egg production. (T. T. McG.)

PLATE 50



WHITE PLYMOUTH ROCK MALE

PLATE 51

WHITE PLYMOUTH ROCK FEMALE

CHAPTER II.

WHITE PLYMOUTH ROCK PLUMAGE

STANDARD DESCRIPTION

Disqualifications

Red, buff or positive black in any part of plumage; shanks other than yellow. (See general and Plymouth Rock disqualifications.)

COLOR OF MALE AND FEMALE

Beak.—Yellow.
Eyes.—Reddish-bay.
Comb, Face, Wattles and Ear-Lobes.—Bright red.
Shanks and Toes.—Rich yellow.
Plumage.—Web, fluff and quills of feathers in all sections, pure white.

DESCRIPTION

The Standard of Perfection confines itself to one description of shape for each breed. All varieties of that breed must conform to this description. The most difficult problems in selecting for exhibition and in judging fowls arise from the marked differences in shape among the specimens in the show rooms. We do not imagine that there ever has been shown, even in the keenest competition, any number of any breed or variety, all the males of which conformed to the Standard shape description. Nor will such conformity ever be obtained. The same is true of the females. Therefore, those who breed White Plymouth Rocks for exhibition should study carefully the description of shape for that variety, in a preceding chapter.

White Plumage.—The plumage of the White Plymouth Rock is just what the name implies—pure-white in every section; possibly no other color that can be as simply and briefly treated in text is as difficult to breed. Because the skin, beak and legs are yellow, pure white plumage is hard to obtain. The yellow pigment necessary to color the skin, beak and legs is inclined to distribute itself where it is not desired, as well as where it is required. The color problem is then to restrict the yellow pigment to those sections in which it is required.

The Standard requires that the web, fluff and quill of the feathers in all sections shall be a pure white. Another statement to the same effect would be that the surface, undercolor and quill of all sections should be pure white.

Defects of White Plumage.—Very often the quills will be slightly creamy, even when the web and fluff are pure white. Yellow and creamy tinges seem to cling most tenaciously to the largest quills and will appear in the quills of the flights and secondaries of the wing if they appear in any section of the plumage; thus the quills of the primaries may be taken in a measure as an index of the color of the bird, relatively as between pure white and creamy white; that is, if these quills are white the entire plumage is usually pure white.

Black plumage is apt to come in the whitest fowls. This cannot always be avoided, nor is a small quantity of black considered a breeding defect. What is known as ticking, small specks of grey, slate or black, occurs to a certain extent in white specimens.

The Breeders' Problem.—The problem for correctly mating for color would then seem to be solved by mating the whitest birds together. This problem would then, if color alone were to be considered, be very easily and quickly mastered. However, because of the requirements in shape, color of legs, eyes, comb as well as consideration of size and vigor, which must be taken into account, the problem becomes more intricate than it at first appears. (T. F. McG.)

CHAPTER III.

MATING WHITE PLYMOUTH ROCKS

On the above subject we quote the following from U. R. Fishel, an experienced and successful breeder of this variety.

Mating White Plymouth Rocks.—"The greatest pleasure to be obtained in breeding fancy poultry is to produce by careful mating of your fowls some exceptionally fine specimen or specimens. We are never satisfied with the results obtained, but each breeding season an effort must be and is made to so mate our fowls that we may expect better results from the breeding yards. We know one must produce better specimens each season or fall behind the great army of successful breeders.

"That 'Like produces like,' we do not dispute, but in producing Standard White Plymouth Rocks it is not the fact that we want like to produce like, but we want to produce better specimens each and every seasons; that is, specimens nearer the standard requirements.

"With this in view we must mate our breeders, not to produce birds of the same general make-up, but specimens better than those we already have.

"It is not necessary to use the double mating system to produce high grade White Plymouth Rocks. Just as good males as females can be reared from the same mating providing, of course, that the mating has been made properly. The color required in White Plymouth Rocks is a clear white; therefore, in selecting your breeders, see that the plumage throughout is white."

Difficulties.—Pure white is quite difficult to maintain in the plumage of fowls and birds. It is less difficult to produce in some kinds than in others. With the White Plymouth Rock it is a difficult problem to produce yellow beak, shanks, feet and skin. The less brilliant the color of the skin and shanks, the more likely will be a pure white plumage. Any variety of white fowls may be selected and bred in line for pale lemon beaks, shanks and skin and the color of the plumage will become gradusually whiter as the color fades from these parts. There is no other combination in the breeding of solid colored plumage that is as difficult as producing the rich, yellow colored shanks and skin with the pure white plumage.

But few can select pure white to a certainty. Few have seen it in its purity. The purest white comes from bleaching and, as in the manufacture of paper, as soon as it is exposed to the air and light, it begins to lose its purity. This is equally true of white-plumaged fowls during the molt or the growing of new feathers. This impurity is apt to disappear as the feathers grow. The plumage shows a stronger yellow tint when the feathers are growing than after the bird is fully fledged and the feathers have aged.

Color Relation in Shanks and Skin.—The heredity that produces the rich yellow tint in shanks and skin has its influence upon the color of the plumage as well. The deeper the shade of yellow in these parts, the more likely is the plumage to have a creamy tint. To avoid this, one must select fowls that have the least color in shanks, skin and quills. The yellow pigment that sustains the color of shanks and skin disappears gradually

from these sections when the hen lays eggs. Therefore, when selecting for color, the stage of growth in which you find the feathers and the length of laying period should be taken into consideration.

Excel in Conformation.—Breeding White Plymouth Rocks differs in no particular from breeding the other varieties of Plymouth Rocks as far as conformation is concerned, but it is understood that White Plymouth Rocks are of one color and should be of a single tone or shade of that color and on that account particular attention may be paid to shape characteristics. The White variety is expected to excel in shape. Shape features of importance in which they may be expected to excel are: The full, round, deep breast, long and deep body and well-proportioned abdomen. The best formation is a body that is evenly poised on shanks with about an equal proportion of breast and body in front, and a like amount of body and abdomen in the rear of the shanks.

In the breeding of fowls of all kinds it must be remembered that size, shape, general formation and color, must all of them have due consideration. If any one of the first three is lacking, the fowls do not conform to breed description; if the color is poor, the variety distinction is faulty; the best quality in all of these features is demanded for white fowls.

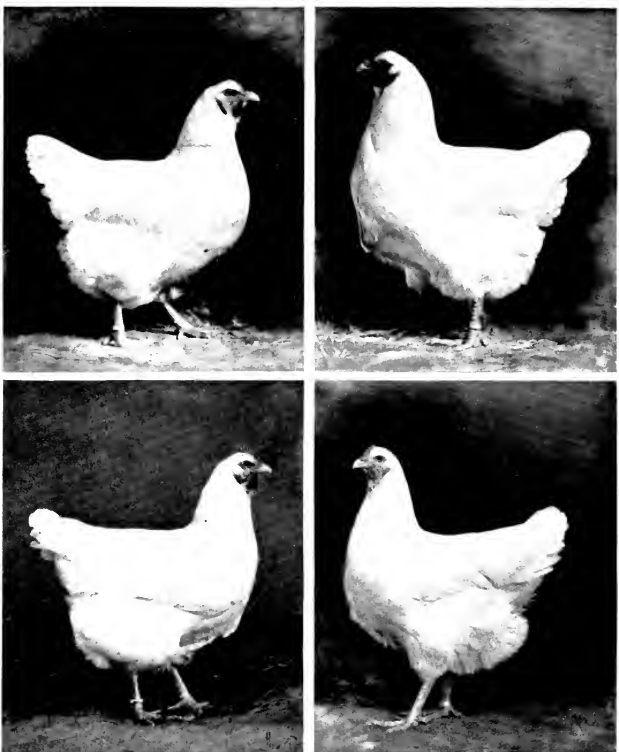
Size and Quality.—Hens that conform to the Standard description are the best. They should be fully as large as Standard requirements suggest, not large by weight through being overly fat, but large and well proportioned for the breed. These hens must be true Plymouth Rocks in every sense. They will answer best if almost entirely free from shape defects.

Overcoming Defects.—There may be a possible chance to overcome a defect in one section of a hen by having superior quality in the same section of her mate, but the continued practice of mating good or true quality on both sides will bring the best results.

Selection.—To succeed in the breeding of pure white plumage, fowls with this kind of plumage should be selected, and, if in addition, they have produced offspring with pure white plumage, these are the best selections possible. Careful attention must be given to both breeding and feeding, as well as to the selection year after year for the shade of color most desired, which in this case is pure white.

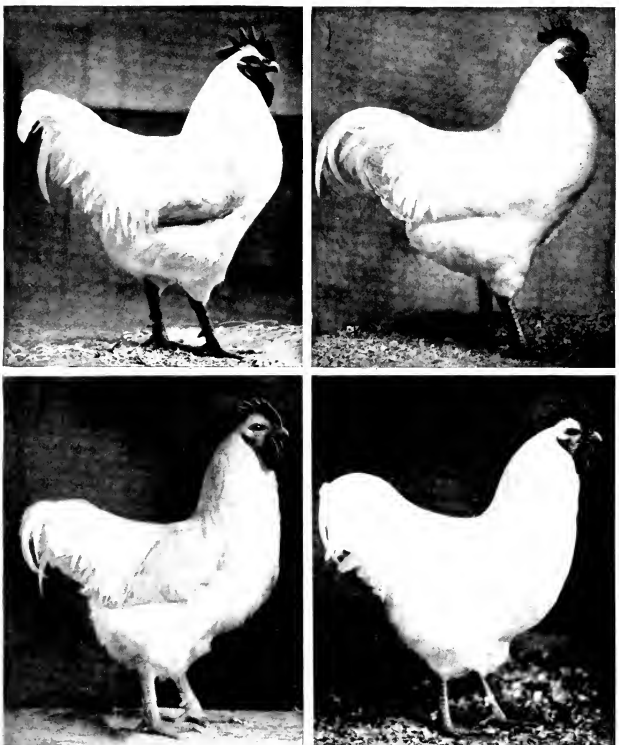
The best way to produce pure white plumage in White Plymouth Rocks is to select for breeding such fowls as show Standard

PLATE 52



ILLUSTRATING FOUR PERIODS IN THE PROGRESS OF WHITE PLYMOUTH ROCK FEMALES DURING THE LAST FIFTEEN YEARS

PLATE 53



FOUR WHITE PLYMOUTH ROCK MALES, EACH TYPICAL OF THE PERIOD IT REPRESENTS, ILLUSTRATING THE PROGRESS OF THIS VARIETY DURING THE PAST FIFTEEN YEARS

qualities and especially pure white plumage. No fowl of this variety should be used for breeding that has pinkish white shanks, which is a disqualification. Lemon-colored shanks are permissible, but there must be enough of the yellow shade in the shanks to prevent the possible loss of a prize in consequence of the shanks being called another shade than yellow by the judge, which would disqualify the specimen.

It is quite a problem to breed the pure white so much admired in the plumage of White Plymouth Rocks, a clean, clear color down to the skin, with the quill of the feathers of the same shade of white; but it is one that is being accomplished by close selection of breeding stock and sound common-sense methods of rearing. Beyond selection, good care must be accorded both the breeding and the young stock. The breeding stock must be kept in the best of condition or inferior chicks will be produced. Chicks that have not strong constitutions are never winning specimens in strong competition nor do they make good breeders.

Breeders of White Plymouth Rocks, almost without exception, use the single mating system, even when seeking to produce the very highest class of exhibition specimens. (T. F. McG.)

FEEDING WHITE BIRDS

Because foods of an oily nature have a perceptible influence on the color of the plumage, only the minimum amount required for the growth of the young should be given. These include corn, and corn meal, principally among cereals, and beef scraps among animal food products. Cottonseed and linseed meals are foodstuffs that should be restricted or omitted altogether. Wheat, when available, barley and oats, are all proper grain foods for adult birds. The wheat by-products—bran, shorts and middlings—are the best selections for ground foods. White corn is also considered much less injurious to white plumage than yellow corn. For growing chicks, oats or barley must be hulled and cracked.

SECTION IV.

CHAPTER I.

BUFF PLYMOUTH ROCKS

THE ORIGIN AND EARLY DEVELOPMENT

THE Buff Plymouth Rocks were admitted to the Standard of Perfection in 1892, and were the third of the Rock family to be so honored, preceding by fifteen years the Silver Penciled, the next variety to follow, which was in turn closely followed by the Partridge and Columbian varieties. We have, then, two groups separated from one another by the dates on which they were recognized by the American Poultry Association, the older comprising the then more plainly garbed varieties. Barred, White and Buff, the general effect of each being that of a solid color; and the later group, Silver-Penciled, Partridge and Columbian, which display more intricate and striking markings.

The Origin.—The first Buff Plymouth Rocks were undoubtedly derived from stock that was contemporary with the progenitors of Rhode Island Reds, a breed, though then unnamed and unauthorized by the American Poultry Association, that was being developed by certain communities of Rhode Island, located not far from Fall River, Massachusetts, where the Buff Plymouth Rock originated and where one of the earliest strains was developed. This association by location of the early Rhode Island Reds with our American-made buff varieties and the natural outcome is at once noteworthy and later becomes significant.

The First Exhibit.—The credit for first showing Buff Plymouth Rocks under that name belongs to R. G. Buffington of Fall River, Massachusetts, who gave the variety its initiatory exhibition experience at Providence, Rhode Island, in 1890. At the same time and place Dr. Aldrich, also of Fall River, showed fowls of similar breeding and type which he called "Golden Buffs."

Though Golden Buffs and Buff Plymouth Rocks were similar in breeding and appearance in every way, Golden Buffs failed signally to command public attention. It would be difficult to

imagine an incident that could better attest the hold that the Plymouth Rock breed had on the poultry-keeping public at that time, and has had since, than this radically practical demonstration. This incident alone enables us to understand that this high regard in which the name Plymouth Rock has been held probably accounts for the fact that we have six varieties instead of one only. Indeed, it may be said that the intrinsic worth of a good name and of a popularity richly deserved has, perhaps, never been so forcefully presented in poultry circles as by this incident at the Providence, Rhode Island Show in 1890.

The Fall River Strain.—According to Mr. Buffington, the Fall River strain was created by crossing Rhode Island Reds and White Plymouth Rocks, and by the breeding of such single comb Rhode Island Reds as were buff or nearly buff in color and approached a satisfactory Plymouth Rock type.

Mr. Daniel Shove of Fall River, who was working along much the same lines as Mr. Buffington and Dr. Aldrich, wrote of the origin of the Buff Plymouth Rock under date of October 9, 1917, that "It was along about the year 1888 that the late William Penn Shepard, R. G. Buffington, Dr. N. B. Aldrich and the writer first began to go to Westport, Massachusetts, and pick up a few of the above birds; the single combs we called Buff Rocks, the rose combs, Buff Wyandottes. The writer from 1889 to 1895 kept the Wyandottes (buff), and exhibited quite a few at Philadelphia in 1893, and at that time they were coming very good and the demand for them was also good. I had always bought most of the above of a Mr. Tripp, of Central Village, Westport, and by the way, this was not the Rhode Island Red founder at all; he was another man farther over by the same name, as the name Tripp at that time was quite common."

It is probable that many early Buff Plymouth Rocks were bred by crossing White Plymouth Rocks with Buff Cochins and that true Rock type, together with fairly good color for the times, was afterwards developed by careful selection. It is very unlikely that all those interested in Buff Rocks would let escape the very apparent opportunity to obtain buff color by crossing some variety that possessed Plymouth Rock type with the Buff Cochin, which is known to be the source of all our best buff color.

The Joslin Strain.—In the decade between 1890 and 1900, several strains were prominent. One of these strains was de-

veloped by the late J. O. Joslin, Tiashoke, New York. Of this line, the book, The Plymouth Rock (Reliable Poultry Journal series), states that it was a fine strain, of good size and true Rock type, that the color was quite even on the surface and sound underneath, and the tail and flights showed very little black peppering or markings. Mr. Joslin claimed that his strain had no Cochin, but was largely of Plymouth Rock blood. This statement arouses curiosity in two connections, namely, what then was the source of buff color, and what was the method of crossing or breeding that could create or develop Buff Plymouth Rocks that were largely of Plymouth Rock blood, when only two other varieties, Barred and White, then existed, from which it is inconceivable that buff could be derived?

Other strains were developed in the early days of this variety, two of the most prominent of which, the Nugget strain and the Wilson strain, were originated and developed in New York state.

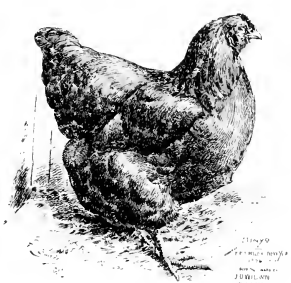
The Wilson Strain.—(From the book, The Plymouth Rock, Reliable Poultry Journal series). Another strain of Buff Plymouth Rocks was originated by J. S. Wilson, Worcester, New York, who writes about the origin and development as follows: "I was reading about the new variety of Buff Leghorns in The Fancier's Gazette, London, England, that strongly suggested the possibility of producing a Buff Plymouth Rock fowl, too. I was at once vigilantly looking over the various yards in this vicinity. After many disappointments in my searches, I was finally successful in finding in a relative's yard a male bird that gave me great joy from seeing so typical a Rock. It was the result of a cross between the American type of Buff Cochin and a Light Brahma. He was a beautiful, even, golden-buff color throughout, except that his tail was nearly black. He had clean, yellow legs, small comb, etc., and weighed twelve pounds. I selected from the same yard two of the best hens, having an even surface color and the least feathering on legs. From these birds, the foundation of this popular variety of the Rock family was produced.

"I raised that year about forty chicks, the result being beyond my most sanguine expectations. I selected two yards of very creditable ones from these. I was puzzled over the amount of ticking that showed on their hackles, as the parent birds were perfectly free from that defect. However, I came to the conclusion that it was probably the result of the Light Brahma blood they contained asserting itself.

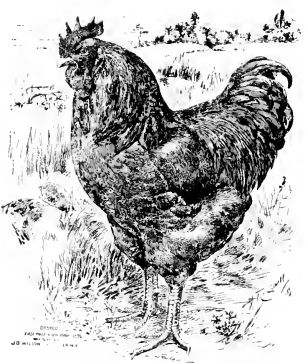
"The next season brought about a more satisfactory outlook, and they continued to improve until the World's Fair (Chicago, 1893), first prize cock, hen, cockerel, pullet and pen were produced. Not any of these birds were ticked and two hens were nearly solid buff. Of course, they had their defects. Some excelled in one section and some in another, no one specimen having the much desired whole that was close to the ideal. The advancement since their creation reaching a point in breeding where not a bird showed any ticking or feathers on legs, with a uniform covering of golden buff plumage, is certainly phenomenal in so short a space of time as ten years."

The Nugget Strain.—One of the most popular strains fifteen years ago was originated by H. S. Burdick, Rome, New York, who named it the "Nugget Strain," a happy choice, as specimens of the latter were particularly strong in the golden buff surface color and were also noted for the soundness in color of their tail and flight feathers, the latter being free from black or

PLATE 54



Sketch of early Buff Plymouth Rock hen exhibited at Madison Square Garden, New York, 1896, by their originator, J. D. Wilson. (First Prize Winner.)



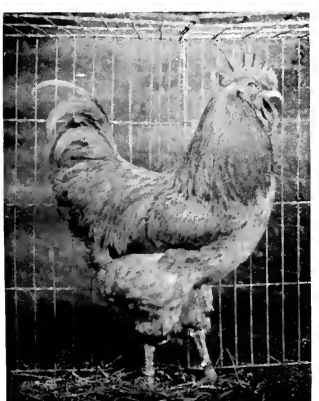
Sketch of early Buff Plymouth Rock cockerel, exhibited at Madison Square Garden, New York, 1896, by their originator, J. D. Wilson. (First Prize Winner.)

white Many of the winning specimens of today have the old "Nugget" blood flowing in their veins, and owe their soundness in surface and undercolor to this source.

By combination of the blood of these different strains and selection of the best specimens, Buff Plymouth Rocks that are true to both the color and shape descriptions of the variety have been and are being produced.

The foregoing gives a history in brief of the origin and early development of Buff Plymouth Rocks. From beyond this point it is difficult to follow the development of the different strains and diversing lines of each in the hands of the many who take up the breeding of a popular variety. That the blood of these different strains has been mingled repeatedly is an assured fact. The good quality of present day Buff Plymouth Rocks may be attributed to the intelligent selection and crossing of individual specimens from these prominent early strains.

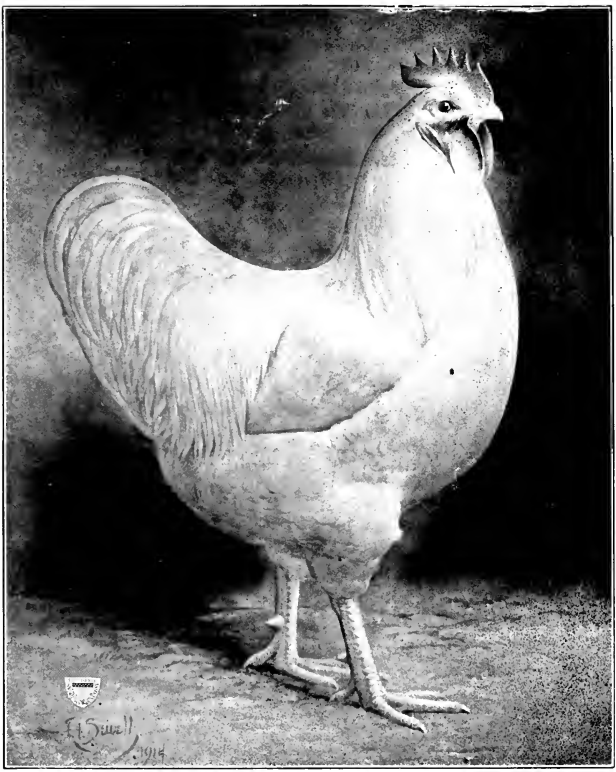
PLATE 55



First prize Buff Plymouth Rock cockerel at Boston 1903, that sold for $300. Probably the highest price paid for a Plymouth Rock up to that time.

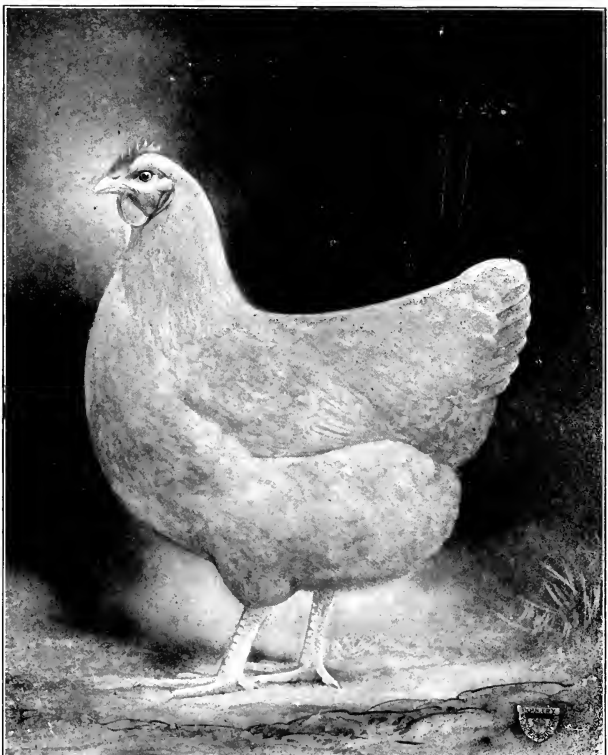
(Cockerel bred by Millville Poultry Farm, Millville, N. Y., M. F. Delano, manager. Sold to Mr. Weimer of Pennsylvania, who named him "Gold Force.")

PLATE 56



BUFF PLYMOUTH ROCK MALE

PLATE 57



BUFF PLYMOUTH ROCK FEMALE

CHAPTER II.
BUFF PLYMOUTH ROCK PLUMAGE

STANDARD DESCRIPTION

Disqualifications

Shanks other than yellow. (See general and Plymouth Rock disqualifications.)

COLOR OF MALE

Beak.—Yellow.
Eyes.—Reddish-bay.
Comb, Face, Wattles and Ear-Lobes.—Bright red.
Shanks and Toes.—Rich yellow.
Plumage.—Surface throughout an even shade of rich golden buff, free from shafting or mealy appearance, the head, neck, hackle, back, wing-bows and saddle richly glossed; undercolor a lighter shade free from foreign color. Different shades of buff in two or more sections is a serious defect. A harmonious blending of buff in all sections is most desirable.

COLOR OF FEMALE

Beak.—Yellow.
Eyes.—Reddish-bay.
Comb, Face, Wattles and Ear-Lobes.—Bright red.
Shanks and Toes.—Rich yellow.
Plumage.—Surface throughout an even shade of rich, golden buff, free from shafting or mealy appearance, the head and neck plumage showing a luster of the same shade as the rest of the plumage; undercolor, a lighter shade, free from foreign color. Different shades of buff in two or more sections is a serious defect. A harmonious blending of buff in all sections is most desirable.

DEVELOPMENT OF BUFF COLOR

To fully comprehend the faults of buff color and the difficulties of eliminating these faults, an understanding of the evolution of buff color in the plumage of domestic fowls would be helpful, even if it is not wholly necessary.

That the bright, clean, uniform and pleasing shade now described and required by the Standard for all recognized buff vari-

eties was not the result of a decision arrived at or a selection determined upon quickly, but rather that it was the result of a gradual development in the tastes and education of those exponents of true beauty as revealed in the buff varieties, becomes most apparent after a brief perusal of any of the authentic descriptions of our first importations or early American and English productions of Buff Cochin, which was the original buff fowl of all lands, so far as known, and which descriptions we take in order that comparisons may be made with the present standard description of these varieties; or, more clearly convincing yet is a comparison of these descriptions of the early importations and native productions with living specimens of the truest color types. Judging from these comparisons, the almost incredibly wide contrast between the two must have developed gradually, and this evolution is perhaps nowhere better or more clearly indicated than in the successive editions of the American Standard of Excellence and its successor, the American Standard of Perfection, brief extracts from which will be sufficient, not only to make this point clear, but to show the progressive steps by which the present popular buff shade was acquired.

Color requirements in the 1875 edition are placed on each section along with the shape requirements for that section, and in some instances strangely mingled, and only on a few occasions do we find the color requirements of one section identical with those of another. ". . . Rich clear buff"—"rich, abundant, clear buff hackle"—"rich, clean buff"—"a clear, deep buff"—are the color descriptions found of some sections for the male, while such sections as wings and fluff have no color description for plumage, except that wings are required to be "quite free from a mealy appearance."

All the evidence that we may obtain from the successive Standard descriptions indicates that the greatest advance that has been made in nearly half a century is most clearly brought out by the difference in the descriptions of the color for the tail section. In 1875, "a rich, dark chestnut, or bronzy-chestnut mixed with black—dark chestnut preferred;" needless to say there is no admiration expressed for chestnut colored tails, to ignore completely those that contain any amount of black, in either males or females of any buff variety at the present time, when the tail is expected not only to be buff, but to be of the same shade as the rest of the plumage. This description of color for this section remained practically unchanged until the 1898

edition became effective, which fact, together with the knowledge that this admixture of black and the existence of chestnut shades even at the present time in the tails of many specimens (though not the best ones, thanks to the skill of the breeders of buff varieties, past and present), emphasizes the well known difficulty of producing clear, golden-buff tails.

The color description of the female in this (1875) edition shows greater uniformity, being restricted to such expressions as "rich buff"—"clear, rich buff"—"clear, pure buff"—"and in color, buff." Even then the description required a tail, "in color buff" without modification. Evidently, females with clear buff tails were not unknown even in those days, and judging from the different Standard descriptions of male and female, must have more frequently occurred in females than in males.

In this connection, it may be well to note that the short lived 1874 Edition also required a uniformly clear, deep buff throughout, tail included. It may be surprising to learn, now when buff necks are the rule, that the 1874 Edition contained the following sentence: "A clear, buff hackle preferred, but a slight marking on the end of feathers of neck not a disqualification." This modification was not discontinued until 1898.

Prior to 1898, a marked difference of opinion as to what constituted real "buff" had existed. It was seldom that the judges agreed upon the exact shade that was most desirable or the most beautiful. The lack of uniformity in the shades of the winning specimens when judged by different persons was commented upon and deplored by the breeders generally. These discussions led to the appointment by the Standard Revision Committee for the 1898 Edition, of a special sub-committee which, among other duties, was to determine just what real buff color was, and then to describe it comprehensibly. As a result of their investigations, we have the Standard phraseology, descriptive of buff color as found in the 1898 Edition for all buff varieties, five in number, very nearly as it is in the present edition. This description was a distinct advance in that, first of all, it decided upon "golden-buff" as the most desirable shade and the most accurate and expressive terminology; second, it demanded "one even shade throughout," that is, in all sections, but allowed undercolor of a lighter shade, though restricting the force of this clause appreciably by further qualifying that "all things being equal,

the specimen showing the richest undercolor shall receive the preference"; the word "richest" was generally interpreted to mean the darkest. This was, however, the beginning of an admission that undercolor in buff varieties was naturally and would always be lighter than the surface color. In explanation of this phenomenon, we quote the following extract from an article written by the late Ezra Cornell in "The Leghorns," as follows:

"Leghorns have comparatively hard, close fitting feathers. In such feathers the coloring matter always concentrates in the surface or harder part of the feather; this is according to nature, and you cannot change it. Look at some of our most highly colored wild birds—the Scarlet Tanager, the Oriole, or even the Canary, and you will find an under color which appears white in comparison to the surface. Take these same brilliant feathers and lay them in the sunlight over a darker under color and you will deaden the color. The rays of light pass through the surface plumage, and on striking the light under color are reflected, much intensified, which gives the plumage its extreme brilliancy; whereas if the rays of light on penetrating the surface were to strike a dark under color, they would be absorbed and the surface color deadened. * * * That I have just written applies especially to the females; the males have a deeper under color, but it is not so apt to be solid. Cockerels are sometimes found with some white in under color of hackle, which, as the bird grows older, will probably appear on the surface. A male bird should have sound under color. This is important, although it makes little difference whether it is light or dark. The shade will, as a rule, correspond with and depend on the shade of the surface color."

The reader will see no inconsistency here, because the flowing plumage of the males is not as hard as that of the shorter female plumage.

The description in the 1898 Standard was better than that found in the one that preceded it by ten years, in that it demanded a plumage which required more skill in mating to produce, because absolute uniformity of color in all sections was required, while chestnut tails in males were still allowed in the 1888 Standard, though more uniformity was demanded in this edition than in those that in turn preceded it.

From this form of progression, we perceived that a general tendency toward acquiring uniformity of color in all sections

existed continuously from the date of the first edition until it became a requirement of the 1898 Standard. Then, too, the term "golden-buff" was more accurate and descriptive than "rich, clear, deep buff," and that it, as a descriptive term, met popular approval is amply attested by the fact that it has continued to be the descriptive color term in all subsequent Standards. In the light of the now known general acceptability of this color description, it can be wondered that it was not used before in the Standard, since it appears in the description of hackle, back, wings, and saddle feathers of females in the first or 1874 Edition, and is frequently used in descriptions found in the early books, notably Burnham's "New Poultry Book," published in 1871, from which we quote the two following extracts: "The color of the Buff Cochin is more of a golden hue than simply buff. The under shade upon the downy or fluffy portions of their plumage is pale, but to look at when in their best feather, they are of a rich, luminous yellow shade, sometimes aptly called lemon-colored." * * * "In the cock of this variety portions of his plumage are red, or darker, as the wings, neck, hackles, etc., but the yellow color prevails in both." To show how early this desire to produce specimens even in color of all sections developed, we quote still further from the same work. "A very desirable recommendation to the Buff Cochin is that the fowl be strictly uniform in color to answer the requirements of the present aimed for standard."

Contrast the description of male and female, which is almost identical, found in the Standard of 1898 and the subsequent editions, with the descriptions found of the importations from foreign countries a little later than the middle of the nineteenth century, and we can recognize the wonderful skill of the American breeders, even had this been their sole accomplishment.

BUFF PLYMOUTH ROCK COLOR

In years past, a diversity of opinions existed as to what constituted a golden buff, and at an earlier period, the same diversity of opinion existed as to what shade of buff was most desirable. Prior to 1898 Buff Plymouth Rocks had varied from cream to very deep shades that were often so deep that red and even brown cropped out on the wing-bows and even on the back. This variation is not at all surprising now that the different sources

of ancestry have been related, as an equitable adjustment between the white of the White Plymouth Rocks and the red of the Red fowls, contemporary with and analagous to the progenitors of our present Rhode Island Reds, that Buffington, Aldrich and probably others used for the foundation of Buff Plymouth Rocks, was not possible during the early stages of its development.

This description as first found in the 1898 Standard, and the agreement upon this shade and description was the result of extended research and investigation of certain prominent breeders of Buff Cochins. It has met general approval, as shown by the fact that the slightest change has never been suggested.

Aside from its beauty, this shade of buff is one that can be bred from and reproduced with much more certainty than some of the delicate shades that were popular years ago. Furthermore, it is a shade that holds from year to year, while the light shades in vogue years ago lose color very appreciably with age. This fact lends aid to establish and maintain the popularity of the rich, golden buff of the last three Standards.

COMMON DEFECTS OF BUFF COLOR

Too Dark or Too Light in Shade of Surface.—The popularity of all the Buff varieties is largely due to the unique beauty of the shade of surface color required by the Standard, which is described as a "rich, golden buff."

A word description of rich, golden buff that can be accurately understood is almost if not quite unattainable, as word descriptions capable of conveying an accurate conception of color to the mind without the aid of the eye are absolutely impossible. But we may state early in this treatise what it is not: It is not the cream, nor lemon, nor is it the deep buff shade, so common during the early years of the variety, which bordered on red in the males' and cinnamon or brown in the females' plumage. It can hardly be described as a mean between these extremes, yet it approached it. The term "golden buff" as used in the Standard is as accurate in its suggestion to the eye as any of the color terms that have been used. This description clearly suggests that the surface of both males and females be the same color as unalloyed gold, which is described in our old books on chemistry as a "bright yellow" metal. This is suggestive of the true shade

of color, yet it is unsafe as a description without modification, because there are many shades of bright yellow. The best way, if not the only way, to grasp the idea of real golden buff is to see a specimen that some reliable authority has pronounced about right in color. The phrase, "one even shade of rich, golden buff," explains itself as well as words seem adequate, but it must be admitted that to fully appreciate the significance of the term "golden buff" and to see in your mind just what shade is demanded, it becomes necessary to see a specimen of ideal of very nearly ideal color, or at least, feathers from such a specimen. While it cannot be said that judges agree always as to the most desirable shade of golden buff, it can be said that the best and most experienced judges do agree tolerably well.

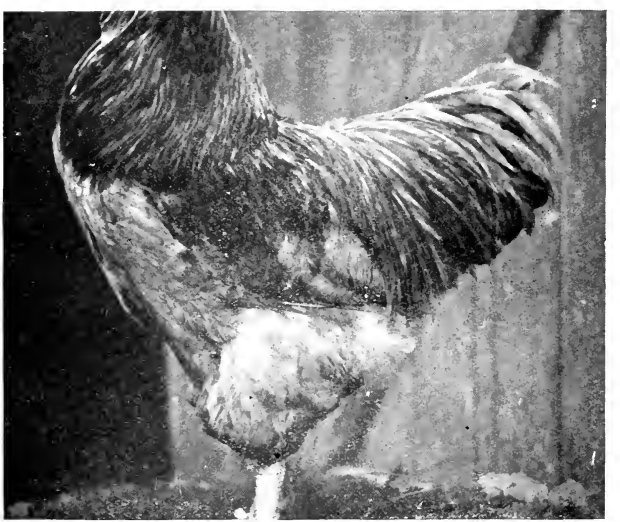
Unevenness in Color.—The words of the Standard, "surface throughout, one even shade of rich, golden buff," when given a second thought, aptly present the breeders' problem: To produce specimens that are one shade on the surface of every feathered section, including the wings when extended and the tail feathers when examined, for these sections are considered part of the surface—certainly not undercolor.

Individuals that are even in surface, including wings and tail, are produced quite often, but while endeavoring to breed such specimens, many that are uneven in surface color to a greater or lesser degree are produced. These variations include too dark, and too light necks; dark wing bows in males; mealiness in females, more often on the wing bows than in other sections; shaftiness, especially noticeable in females; light colored edging, sometimes referred to as straw edging on females; dark edging, much often on the backs of females; the shade of top surface darker than the breast and fluff, most often in males, besides defects in color of wings and tail.

During the early history of the breed an even colored male was very rarely seen. This fact was particularly noticeable in both the extremely light and extremely dark specimens. The chief fault in the strongly colored specimens was the highly colored wing bows, which were often decidedly red instead of buff. This pronounced defect is not seen at the present time in males of even ordinary merit. The very light buff, usually more explicitly designated by the term "lemon buff" males, have been received with highest favor in the show room at times, and in certain localities, but have of late years passed into discard in

favor of a particular shade of buff, expressly described as "golden buff," which once seen usually meets with instant approval. The invariable tendency of lemon buff males is to fade and lose color after the first year, or after the first moult; to become too light on the back and breast and to breed a large proportion of males too light in these sections. Light colored females now known by the apt description of "cream" were also popular in certain sections of the country, but only for a short time. From a breeder's standpoint, these are as undesirable as the lemon males.

PLATE 58



Buff Plymouth Rock male of the old styled plumage, showing most pronouncedly the too dark shoulder and wing bow. In the early days of the variety, a most common example of unevenness of color.

Mealiness.—This objectionable feature is quite common in females, generally in the wing bow or coverts, though it is found in other sections of females, and in breast and fluff of males. Inasmuch as no specimen that has this defect can appear to be even in surface color, this is a most serious defect and particularly serious because it is very difficult to breed out. It consists of rather small specks, spots, or stipples of lighter color. It is not always so pronounced that it is noticeable by casual observation, but it is easily detected upon examination of the specimens in the hand. See illustration, plate 59. Also definition, page 20.

Shaftiness.—This is another fault that causes uneven color. When shafting appears, it is caused by the shafts of the feathers being lighter or darker than the webs. In most cases they are lighter. They are objectionable because with them an even surface is impossible. It is more noticeable in the plumage of females than of males, except in the breast and body. See definition, page 21. Also illustration, plate 60.

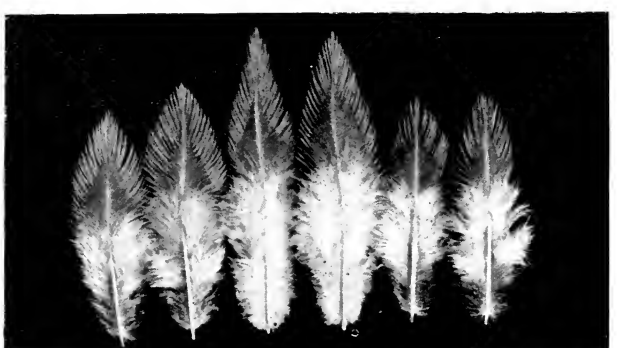
PLATE 59

A Buff Plymouth Rock female, showing uneven plumage, including the too dark wing bow.

Light Edging.—This fault occurs when the edges which are not as dense in structure as the body of the feathers are lighter in color. It is found usually in the back section of females, but infrequently in other sections of the females and in the breast and body of males. See illustration, plate 60.

Foreign Color.—Both black and white are found in the tails and wings of both sexes. Black is the more common in tails and secondaries and white in primaries. Both are decidedly objectionable as the rules for cutting for defects plainly show, by requiring a cut of from one-half a point to the color limit of the section. Black in the tail is a most common fault and a little at the base is not dealt with severely. The color itself is usually modified, in reality a reddish-brown or brownish black and generally appears in broken field or in large dots or small spots, and sometimes in a few of the main tail feathers, but not all. It appears in tails of both sexes. White is equally objectionable and to some breeders more so than black and indicates weak color. Individuals that show considerable white in wing or tail are rarely used in breeding, though some white might be tolerated, possibly, if the surface color was even and the undercolor strong. On the whole, white as a color defect is more easily overcome than black.

PLATE 60



BUFF PLYMOUTH ROCKS

Showing (1) shafting in each feather, and (2) light edging.

Silver-Gray in Tails.—A peculiar color effect is often seen in the tails of both sexes of buff varieties. The main tail feathers of some individuals are entirely silver-gray in color, while those of others show this shade only on one side of the quills. Again, it is observed on the inside of the tail feathers, while the outside will appear buff, or nearly buff.

Wings.—Black is found in the wing, generally on the upper web of the secondaries, though it is often seen in the little feathers that cover the bases of the flights. White appears in both flights and secondaries. Poor health sometimes is accountable for white in plumage of all varieties, but it is inadvisable to find such an excuse for placing birds with this defect in the breeding yards. Brownish colored spots often appear in the flights, a most undesirable characteristic.

The presence of white is not restricted to the web of the feather, as the shaft of the flights very commonly shows white at base. The best specimens of the present day show no black or white in wings, and but little black and no white in tails, while occasionally specimens with wings and tail of as good buff color as any part of the plumage are produced. See Plate 64 for an illustration of clean, even buff tail feathers.

Tail Plumage of Darker Shades.—Passing from the presence of black, white, or black and white in tail plumage, we often find the plumage of this section too dark, though neither black nor white are present. The color, though dark, resembles buff, yet it is plainly not buff, but rather more brown than the golden shade desired. This shade has been very aptly termed chestnut, and we have what are commonly termed chestnut-colored tails. Sometimes that applies very well to the tail color as a whole, but more often as shown by illustration, Plate 61, it appears in patches on one or more feathers, while the remainder of the feather or feathers may be buff, as shown in illustration, Plate 63.

Undercolor.—In buff varieties, undercolor is considered largely from the breeder's standpoint and valued according to its necessity in breeding the shade and the evenness required in surface color. However, undercolor is considered important. It is impossible to breed specimens with undercolor that is as strong as the surface color. The undercolor should be buff, but though buff, it is invariably of a much lighter shade than the

surface. Some of the specimens which show a splendidly even gold surface of buff are very light in undercolor. This does not prevent such specimens from winning, however, though a shaft that is buff to the skin is much desired.

PLATE 61

1 2 3

BUFF PLYMOUTH ROCKS

Half-tone from photograph of smaller sickle (1) and tail covert (2), showing the defect of being marked with "chestnut" color. Also a tail-covert feather (3) of pure even shade of buff. [See illustration of complete tail (page 229), showing same defect.] No. 2 shows the defect of very light undercolor.

COLOR DEFECTS OF BUFF ROCKS ACCOUNTED FOR

After analyzing their ancestry and simply remembering that all the early strains were subject to the process of amalgamation sooner or later, and mostly sooner, we can most readily account for the prevailing color defects. For every breeder, no matter how well satisfied with his strain, very soon recognizes the good qualities of others, and as quickly as he discovers a weakness

PLATE 62

EXTENDED WING OF BUFF PLYMOUTH ROCK MALE

Clear, even shade of buff, with exception of darker shade showing in front row of feathers on wing bar.

in his own flock acquires in some way the blood of another that possesses the quality in which his strain is deficient; so the blood of all meritorious strains is quickly passed around and it is well it is so, because then the variety acquires something of uniformity.

Stock that showed black in tails and wings would naturally follow from the same ancestry that developed the Rhode Island Reds (The Fall River Buff Rocks). Flecking and white in the wing and undercolor from Light Brahma. (Wilson strain). The same defect would be expected from stock that contained the White Plymouth Rock blood, and the white blood of both strains would account for light undercolor and unevenness of surface.

PLATE 63

BUFF PLYMOUTH ROCKS

Half tone from photograph of tail of Buff Plymouth Rock cock (winner of first at Madison Square Garden, New York, show), showing smaller sickle and larger tail covert marked with chestnut color, a not uncommon blemish in fine buff colored males. This color is very much less defective in buff varieties than gray, black or white.

PLATE 64

BUFF PLYMOUTH ROCK TAIL PROPER AND TAIL COVERT, MALE

Ideal color, even shade of buff throughout.

1. Tail proper.
2. Upper tail proper.
3. Tail covert.

Silver-gray, which appears in the tail, would seem to be an admixture of a little black with considerable white, or, perhaps, some buff, comparable perhaps to the production of blue plumage sometimes, sometimes a black and a white mottled plumage by the crossing of white and black birds. The Buff Cochin is the source from which all buff varieties obtained their color and to the color defects inherited from other varieties that were not buff used in creating the Buff Plymouth Rocks must be added the defects of the Buff Cochins, employed in the various crosses.

CHAPTER III.

MATING TO PRODUCE BUFF PLUMAGE

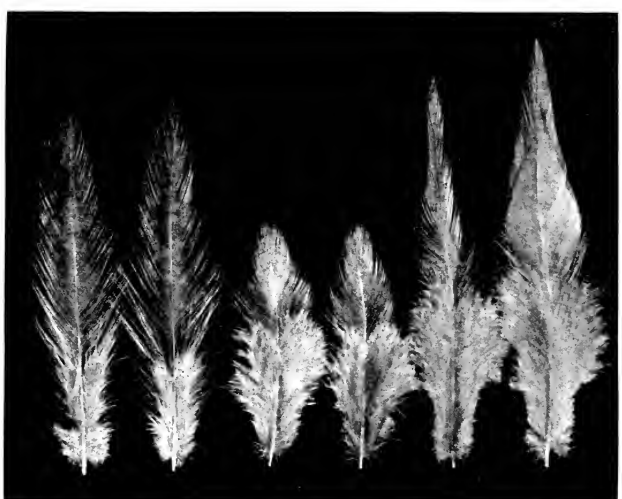
Buff is classed as one of the solid colors, to produce which breeders seldom employ more than one mating. In the earlier history of this variety, perhaps fifteen years or more ago, double mating was practiced.

Early System of Mating.—We find in the early treatises on breeding buff varieties that advice as to how to double mate for buff color conforms closely to our ideas of double mating today. Nowadays, little double mating is done to produce buff or any solid color. Double mating for buff was excusable and perhaps advisable in those days, because of the unsettled condition of the buff variety, their composite character and short existence, to overcome several glaring faults, such as dark neck, dark or red shoulders, black in tails and black in wings, wings and tails in which white was prominent, a wide difference in color of top and lower sections, and also a wide difference in color of males and females. The early breeders had to contend with these and other faults and to breed them out; and then undercolor was more important in the eyes of the judge and breeder than now. Is it any wonder that these early breeders adopted the quick method of correcting one defect by using its antidote—a defect of opposite character to counteract it, and of trying to correct in one sex at a time; as, for instance, attempting to produce sound surface and strong undercolor on the females by breeding males altogether too strong in color, especially in the shoulders and back? Such males were even then useless as show birds because of these dark or red sections and the unevenness of the color of

their plumage. The early breeders did succeed, and admirably, in improving color and this improvement removed the necessity of double mating.

At present and for some time back, the very best standard Buff Plymouth Rocks have been produced by the single mating system, which has been described heretofore as the mating together of as nearly standard colored specimens of both sexes as could be procured. A male of ideal color would make the ideal mate of a female of ideal color, in the opinion of those breeders who believe in this system, while others on account of

PLATE 65



BUFF PLYMOUTH ROCK

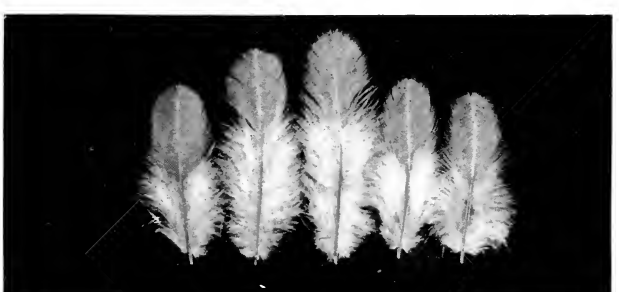
Two hackles, two back and two saddle feathers showing a rich, even shade of buff throughout surface and undercolor.

the tendency of buff to lose color, would prefer that one sex or the other in any mating should be a shade or two darker or richer than that which is regarded as ideal or standard. Undoubtedly, if standard-colored specimens were backed with a sufficiently long ancestry of like characteristics, standard-colored specimens of both sexes would together form ideal matings.

A Composite Variety.—But as related in a previous chapter, the Buff Plymouth Rocks, as well as most of our buff fowls, are composites of different breeds, varieties and strains, obviously of birds of different types and colors. Though type is once established, as it is recognized to be in degree, yet color remains to be established, and if that, too, is established in degree also, both must be maintained and furthermore perfected. The treatise on type has, however, preceded this chapter, and we may deal now with color alone, which, from its composite origin, inherits faulty tendencies to overcome and offset which becomes the special problem of the breeder.

To Hold Color.—One of the tendencies of buff color is to become too light or "faded out," as it is often expressed by breeders of buff varieties, a tendency that we readily understand after a study of the ancestry of the variety. To offset this

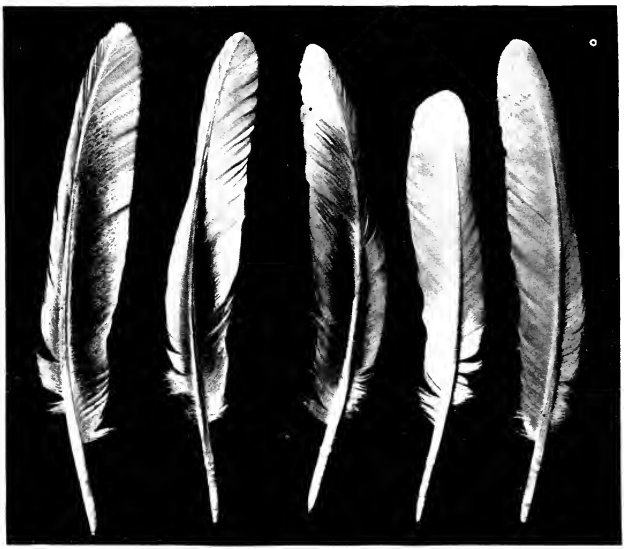
PLATE 66



BUFF PLYMOUTH ROCK FEMALE

Back and breast feathers. Illustrating the breeding value of rich buff-colored quill, though undercolor may be very pale buff.

PLATE 67



1 2 3 4 5

BUFF PLYMOUTH ROCK COLOR DEFECTS, COMMON IN WING PRIMARIES OF MALE OR FEMALE

1. Black or brownish black, shading to large portion of buff, peppered with dark spots where black and buff meet.

2. Largely black at base and along the quill, remainder buff.

3. Buff, with considerable black, shading to gray, with white at end.

4. Root of feather white and web next to root white, main portion of webb buff, with white at end.

5. Ideal, clear buff.

PLATE 68

1 2 3 4 5

BUFF PLYMOUTH ROCK COLOR DEFECTS COMMON IN WING SECONDARIES OF MALE OR FEMALE

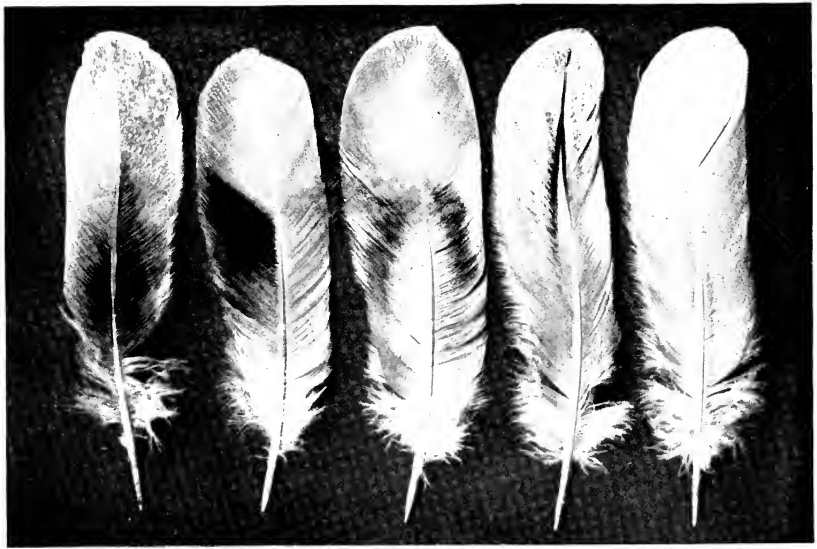
1. Black or brownish black, shading to large portion of buff, peppered with dark spots where black and buff meet.

2. Largely black at base and along quill, remainder buff.

3. Buff with considerable black, shading to gray, with white at end.

4. Root of feather and web next to root white, main portion of webb buff, with white at end.

5. Ideal, clear buff.



BUFF PLYMOUTH ROCK MAIN TAIL FEATHERS OF MALE OR FEMALE

1—Brownish black at base, shading to buff, with black peppering extending into buff. 2—White at root, considerable black near middle, buff at end. 3—White at root, black or gray in middle, considerable buff at end. 4—White at root, black and gray following quill, gray peppering in buff at end. 5—Ideal buff; best obtainable.

BUFF PLYMOUTH ROCK, SICKLE FEATHERS OF MALE

Top, clear, ideal buff; best sickle obtainable. Middle, considerable white at root, remainder buff. Bottom white at root and along sides, black and gray at base, remainder buff.

tendency to lose color, breeders often, as stated, select specimens for one sex in the mating that are a little richer or stronger in color than that described by the Standard. Breeders do not find it advisable, however, to go too far in this direction. Faults and tendencies to faults must be corrected, but not over-corrected. The latter is as liable to occur as is the former.

To Maintain Evenness.—Many faults of the progeny in color are attributed to too wide a variation in color of the parents. Specimens of extremes of buff color mated together seldom produce a mean. The progeny are mostly extremes and seldom are they sound, even colored specimens at that; patches of dark and light buff are often found on the same specimens. Mealiness and light or dark edgings are attributed to the mating of extremes in buff shades. Shaftings in the plumage of one or both sexes in the mating is due to weak undercolor of the quill. By reading the preceding chapter, the undesirability of these characteristics will be clearly understood.

Black in Tails and Wings.—Other expediencies are occasionally resorted to to be hold to the desired shade of color. The impression that the strength of color may be preserved by breeding males or females that show black in tail and perhaps in wings has been a common one. On this point, one writer[1] takes the view that buff is largely yellow modified slightly by red and white, and that black is nowise a component of buff; that in choosing one of two evils, black or white, the latter is to be chosen without hesitation. Among the faults caused by breeding from specimens that show black are lacing or ticking in necks, black in tails, black in wings, smutty undercolor and a muddy surface color, and it will not counteract white, according to this writer, who further states "you will get plenty of red and white without breeding for them," but that either red or white are much more readily bred out than black. In closing, this breeder gives this advise: "Remember, yellow and black will not mix and produce a pleasing color, while yellow, red and white will mix and give you that beautiful shade called buff." This view has since been taken by other writers of experience in breeding buff varieties.[2]

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1. W. W. Browning, book, R. P. J., The Wyandotte.

2. M. F. Delano, The Orpington, R. P. J. A. O. Schilling, A. P. W. for January, 1913.

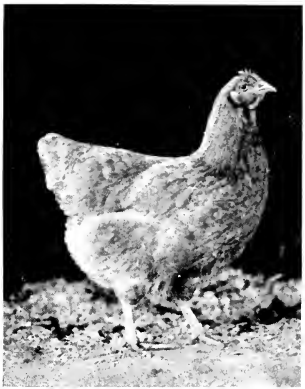
Some, of course, differ or have differed with this writer, and while both opinions are held, it is admitted by all that black is difficult to breed out and keep out. As for white in wings and tail, the same may be said, though the amount of white can be perceptibly reduced from one generation to another by selection.

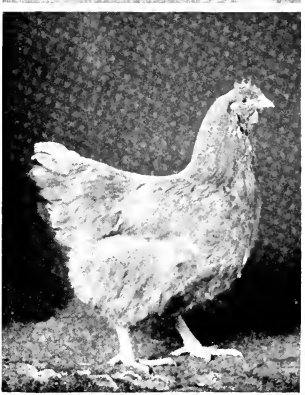
The correct shade and evenness of color are qualities of most importance in breeding birds of both sexes. Of the two, evenness, if the color is not too far removed from the desired shade, is perhaps the most important, because when persistently selected for generations, this quality will correct such faults as mealiness, shaftiness, light edging, and finally will influence the color of main tail feathers and the flights and secondaries. When selecting specimens for evenness of color, all sections should match. Such a specimen is hard to find. The neck may be lighter or darker than the other sections, and the breast, body and fluff are often lighter than back, wing and tail. We desire, first, uniformity in the shade of all sections of the specimen, and then, if the specimen be of the desired shade, it is desired that the general shade of the female should match the breast, body and fluff of the male.

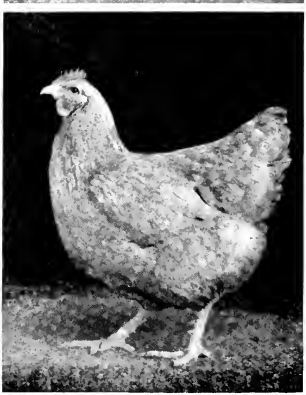
Black in tail or wings may be bred out in time. The breeder should not expect to eliminate any great amount of this strong colored pigment in one generation. This is often attempted. There is a general impression that black may be offset with white. This is, perhaps, true but in a comparatively small number of the progeny of matings in which this expediency was resorted to. By mating birds with black in plumage to those with white in corresponding sections, blood that has a tendency to produce black is mingled with blood that has a tendency to produce white, and the result is blood that has a strong tendency to produce both black and white in the plumage; black in some, white in some, and both black and white in others.

The breeding out of white involves the same principle. It should not be offset in matings by using specimens of the opposite sex that have black in the plumage. A safe rule and one that produces the most pure buff plumage in the individual and the most buff in individuals of number, is to offset either black or white by selecting for the breeding specimens of each successive generation those in which these undersirable colors are not present, or those with as little of either as possible.

1 PLATE 71 2





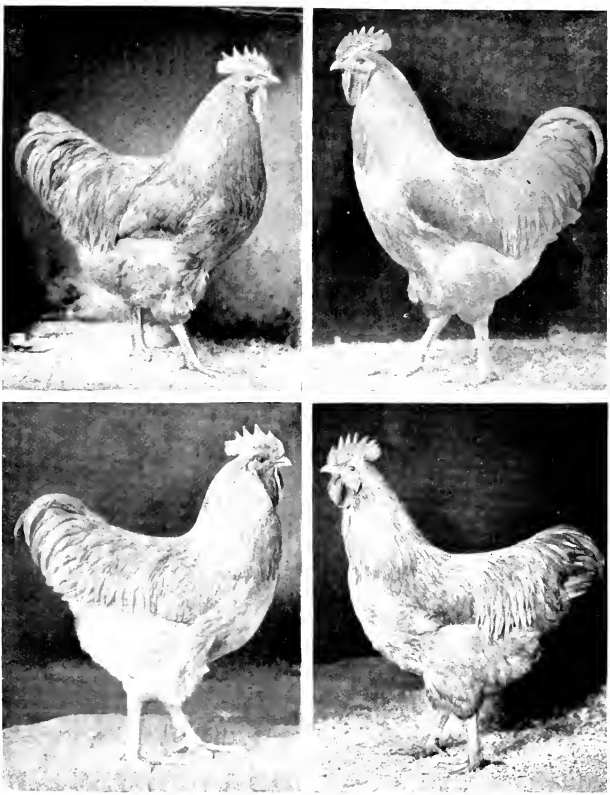


3 4

ILLUSTRATING FOUR MODERN BUFF PLYMOUTH ROCK FEMALES

1, 3. Winners at Chicago (Fanciers' Show). 2. Winner at New York (Palace). 4. Winner at New York (Garden).

1 PLATE 72 2



3 4

ILLUSTRATING FOUR PERIODS IN PROGRESS OF BUFF PLYMOUTH ROCK MALES

1, 2, 4. Winners at New York (Garden). 3. Winner at Chicago (Fanciers' Show).

CHAPTER IV.

MATINGS

To summarize from the foregoing, the best mating for color viewed in the light of the most modern thought would be the one that included the best colored specimens, that is, those that have the required standard shade of buff, the most even from head to hock and tip of tail. This description implies absolute absence of black, white or any foreign color, and of mealiness and shaftiness as well.

This is practically the method of mating that the best breeders employ at the present time, but it is subject to one modification, which some breeders use to protect themselves against loss of color. To hold to the rich, golden shade and to prevent a relapse to lemon, cream and other undesirable shades formerly common, breeders use matings in which the male is one or perhaps two slight shades richer than what is generally considered "rich, golden buff." Sometimes the strength of color is maintained by the matings first described with standard buff males and females for the greater number, and a lesser number of females that are a shade or possibly two shades richer than standard buff. For evenness of color and other requisites, such females must be fully as desirable as standard specimens.

Specimens that approach the cinnamon shades or those that are muddy or brown to the slightest degree are not tolerated in the matings by any recognized breeder of the highest class.

Undercolor is secondary to surface color in buff varieties, and while quite perceptibly lighter than the latter, some strength is demanded in all specimens that are selected for breeding birds. The quill particularly is required to be buff to the skin and as near in shade to the surface color as it is possible to select, other things being equal. By breeding from such specimens, shaftiness is eliminated or reduced to the minimum.

These methods of breeding are comparable with the principle of single or standard matings, and it is from such that the best Buff Plymouth Rocks of today are produced.

SECTION V.

CHAPTER I.

SILVER-PENCILED PLYMOUTH ROCKS

THE ORIGIN AND EARLY DEVELOPMENT

THE first Silver-Penciled Plymouth Rocks came from the Cornell line of penciled fowls. While that gentleman was developing a Silver-Penciled Wyandotte, both Mr. Cornell and Mr. Shey, who had charge of Valleyview Farm at Ithaca, New York, sent to Elmwood Farm single comb specimens from their flocks. These were mated by George B. Randolph, the owner of Elmwood Farm, with some single-comb specimens of the same strain that he had hatched and reared at Elmwood.

It was in the year of 1894 that Mr. Ezra Cornell of Ithaca, New York, became interested with Mr. George H. Brackenbury of Auburn, New York, in producing a Silver-Penciled Wyandotte. Mr. Brackenbury had, prior to this, made a cross of a Golden-Penciled (Partridge) Wyandotte male with a Dark Brahma hen. Mr. Cornell selected a Silver-Laced Wyandotte male, which he mated with a Silver-Penciled Hamburg female. He also mated a Dark Brahma hen of the Newton Adams strain with this Silver-Laced Wyandotte male. Some of the pullets from both of these hens were mated to the Silver-Laced Wyandotte male and other pullets from the same hens and to some of the progeny produced by Mr. Brackenbury from his mating of the Golden-Penciled male with the Dark Brahma female.

Then Mr. Cornell gave some of the progeny from these matings to Elmwood Farm, Weston, New Jersey, from which was bred the Silver-Penciled Wyandotte female illustrated by Mr. Sewell in the American Poultry Journal and in the Reliable Poultry Journal of January, 1902. This female shows plainly the Brahma shape. Some of the pullets from the same lot of fowls had single combs. Mr. Cornell and later Mr. Wyckoff, through Dennis Shey, sent a single-comb male and two single-comb females from their flock to Elmwood Farm. These, with

eight or ten others, were turned out at free range on the farm and for three years were bred under these conditions. The poorest of those produced each year were culled out and sold to market, until finally there were ten or twelve females and one male that were good enough in shape to be called Plymouth Rocks. The females were beautifully penciled and had backs and tails that were typical of the Plymouth Rocks. This flock and their offspring were sold to James Forsyth of Oswego, New York, and by him to Mr. F. E. Corey of Ossining, New York.

Another strain of Silver-Penciled Plymouth Rocks was made by the mingling of Dark Brahmas, Silver-Grey Dorkings and Mottled Javas. It was asserted at this time that this was the only true strain of Penciled Plymouth Rocks, but just why any one should claim that a mixture of this kind had or could produce true Plymouth Rock is far from clear. The claim is made ridiculous by the fact that the strain created in this way used some of the original Elmwood stock in its make-up, as many of the Penciled Plymouth Rocks from Elmwood Farm went to breeders of the Brahma-Dorking-Java strain.

The best of all the Silver-Penciled Plymouth Rocks can be traced to the Dark Brahma females supplied by Newton Adams. Many of the best females of this variety now have very much the same shape as the Brahma female ancestors. The hens used were rich in color, beautifully penciled and fairly close feathered. Indeed, as compared with the Light Brahmas of today they were closely feathered. The question of egg production and the size of the egg produced has been used as proof for or against the quality of the fowls. The originals of this variety that were sold from Elmwood Farm to James Forsyth were of good size; they had fairly good Plymouth Rock shape; they had good color and markings; they were prolific layers; and their eggs averaged more than two ounces each. (T. F. McG.)

CHAPTER II.

SILVER-PENCILED PLYMOUTH ROCK PLUMAGE

STANDARD DESCRIPTION

Disqualifications

Shanks and toes other than yellow or dusky yellow. (See general and Plymouth Rock disqualifications.)

COLOR OF MALE

Head.—Plumage, silvery white.
Beak.—Yellow or dusky yellow.
Eyes.—Reddish-bay.
Comb, Face, Wattles and Ear-Lobes.—Bright red.
Neck.—Hackle, web of feather, solid, lustrous greenish-black, with a narrow edging of silvery white, uniform in width, extending around point of feather; shafts, black; plumage in front of hackle, black.

Wings.—Bows, silvery white; coverts, lustrous greenish-black, forming a well-defined bar of this color across wings when folded; primaries, black except a narrow edging of white on lower edge of lower webs; secondaries, black, except lower half of lower webs which should be white, except near end of feathers at which points the white terminates abruptly, leaving end of feathers black.

Back.—Silvery white, free from brown; saddle, silvery white, with a black stripe in each feather, tapering to a point near its lower extremity.

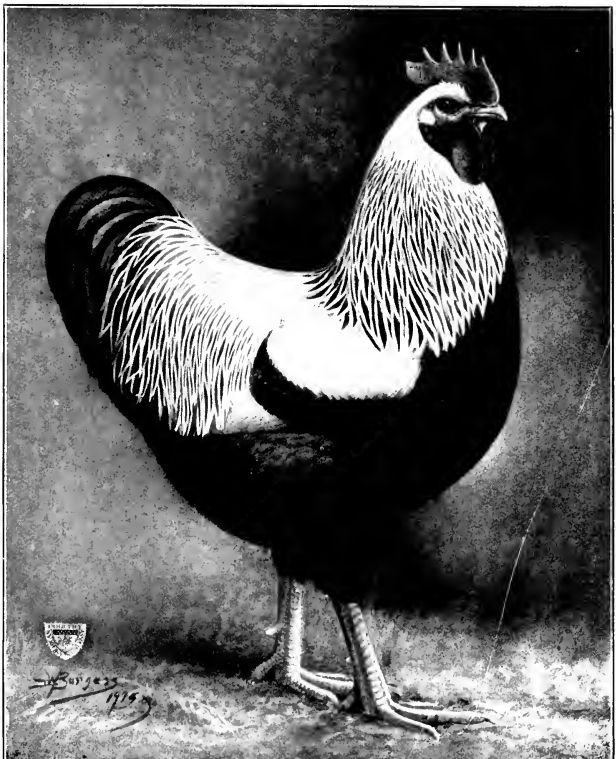
Tail.—Black; sickles and coverts, lustrous greenish-black; smaller coverts, lustrous greenish-black edged with white.

Breast.—Black.
Body and Fluff.—Body, black; fluff, black slightly tinged with gray.
Legs and Toes.—Thighs, black; shanks and toes, yellow or dusky yellow.
Under-Color of All Sections.—Slate.

COLOR OF FEMALE

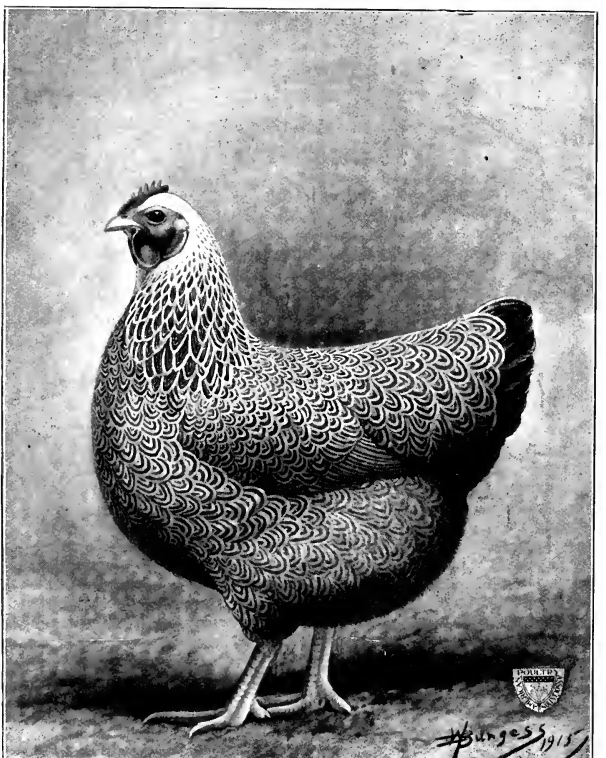
Head.—Plumage, silvery gray.
Beak.—Yellow or dusky yellow.
Eyes.—Reddish-bay.

PLATE 73



SILVER-PENCILED PLYMOUTH ROCK MALE

PLATE 74



SILVER PENCILED PLYMOUTH ROCK FEMALE

Comb, Face, Wattles and Ear-Lobes.—Bright red.

Neck.—Silvery white; center portion of feathers, black slightly penciled with gray; feathers in front of neck, same as breast.

Wings.—Shoulders, bows and coverts, gray with distinct dark pencilings, outlines of which conform to shape of feathers; primaries, black with narrow edge of gray penciling on lower webs; secondaries, upper webs, black; lower webs, gray with distinct dark pencilings extending around outer edge of feathers.

Back.—Gray, with distinct dark pencilings, outlines of which conform to shape of feather; feathers, free from white shafting.

Tail.—Black, except the two top feathers, which are penciled on upper edge; coverts, gray, with distinct dark pencilings, outlines of which conform to shape of feather.

Breast.—Gray, with distinct dark pencilings, outlines of which conform to shape of feather.

Body and Fluff.—Body, gray, with distinct dark pencilings, reaching well down on thighs; fluff, gray, penciled with a darker shade.

Legs and Toes.—Thighs, gray, with distinct pencilings; shanks and toes, yellow or dusky yellow.

Under-color of All Sections.—Slate.

Note.—Each feather in back, breast, body, wing-bows and thighs to have three or more distinct pencilings.

CHAPTER III.

DESCRIPTION OF PLUMAGE

The Silver-Penciled Plymouth Rock should have the same size, shape and body proportions as other Plymouth Rocks, and the same color and markings as the Dark Brahma.

The combination of silvery white and black in the male and silvery white, gray and black in the female is pleasant to the eye. When of fine quality there is no other fowl more beautiful when at her best and when shown in perfect condition.

PLATE 75

1 2 3 4

FEMALE, WING FEATHERS FROM WELL MARKED SPECIMENS

Male: 1. Primary. 2. Secondary.
Female: 3. Primary 4. Secondary.

THE MALE

The silvery white top color of the male forms a covering for the black in breast and underlying colors. The lower edge line of the silvery white extends to the point of the breast and follows the fold of the wing-bow back to the extreme point of the wing

which, when properly folded, is hidden beneath the lower line of the saddle plumage and the plumage of the upper part of the abdomen. This top color should be clear silvery white, that is, striped in hackle and in saddle with lustrous black. The wording of the Standard is: "Head plumage, silvery white; hackle, solid lustrous greenish-black with a narrow edge of silvery white, uniform in width, extending around point of feather; plumage in front of the hackle, black; shank and toe, yellow or dusky yellow."

Hackle.—In plainer language, this means that the hackle feathers and the saddle feathers of the male shall have a black stripe extending almost to the point of the feather; this black should be completely surrounded with silvery white. "Plumage in front of hackle, black," means that if you part the hackle in the center below the beak, you will find that the black feathers of the breast extend up to the throat; thus the plumage in front of the hackle is black.

Wings.—The bows of the wings are silvery white. The wing-coverts are lustrous, greenish-black, forming a well-defined bar of black across the folded wing. The primaries of the wing are black with a narrow edge of white on the lower edge of the lower web of the feather. The secondaries of the wing are black, excepting the lower half, which should be white. The ends of these feathers are black. See illustration, Plate 75.

Back and Saddle.—The back, from beneath the hackle and almost to the end of the saddle, is silvery white. The striped feathers of the saddle extend up and over the sickle feathers, the silvery white plumage of the back merging into these striped feathers.

Tail.—The main tail feathers are black, and the sickles and tail-coverts are black emblazoned with a lustrous greenish sheen. This sheen must have a greenish-black and not a purplish shade, which is most undesirable.

Breast.—The breast, the body, the underbody plumage about the thighs and the fluff are black; the latter may be slightly tinged with gray.

Undercolor.—Undercolor in all sections should be slate. The same shade of undercolor is desirable in the females for breeding.

Toes.—Shanks and toes are yellow or dusky yellow.

THE FEMALE

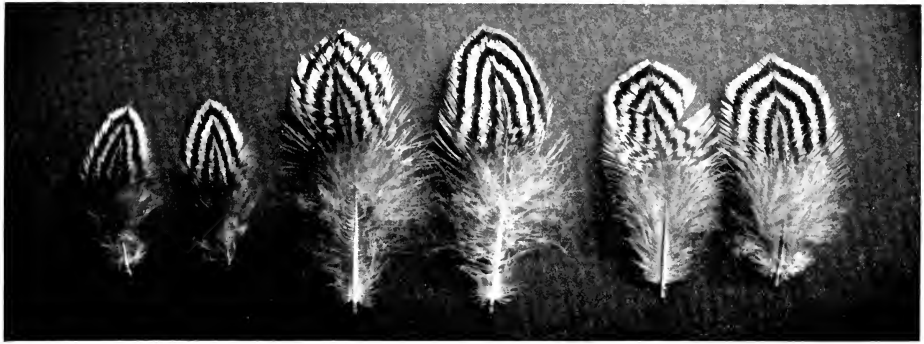
The best quality of female must have an even shade of gray throughout. Each feather of back, wing-bow and coverts, tail-coverts, breast and body, should be penciled with a darker shade, which is described as dark penciling; it should not be black, because this destroys the even shade of gray so desirable in the plumage of the female of this variety. The Standard requires gray, with distinct dark pencilings, outlines of which conform to shape of feather; the feathers should be free from white shafting. This would indicate that the female should be of a gray shade, penciled with a darker shade deep enough in color to show the outlines distinctly, and these outlines must conform to the shape of the feather. The breast of the female, while usually somewhat lighter in shade just below the throat, should deepen into the same shade of color down under the body and between the thighs. While the fluff is gray penciled with a darker shade in some specimens, the shade is with most specimens lighter than in the body plumage.

The penciling of the feathers of the breast and body, the wing-bows, and the thighs should have at least three distinct rows. Some of the feathers on some specimens have even more than this. For illustrations, see Plates 76, 77, 78.

The Neck.—The neck plumage should be silvery white; the center portion of each feather black, slightly penciled with gray; the feathers in front of the neck like those on the breast. The black centers of the neck feathers should be almost as large as the feather and edged with silvery white. The neck plumage of the finest females are frequently penciled almost as distinctly as are the feathers of the back. See illustration, Plate 80, Page 257.

Wings.—Besides the shoulders, bows and coverts, the color and markings of which conform with those of breast and back and have already been described, the primaries and secondaries should be considered. When commendable, primaries are black with a narrow but distinct single line of gray on the edge of the lower web. A correctly marked female flight feather is shown in Plate 79. The outer web of each of the longer secondaries should be penciled with gray in lines which run parallel with the lower or outer edge of the feather. The shorter ones, or those nearest the body, should be penciled on that portion of the feather that

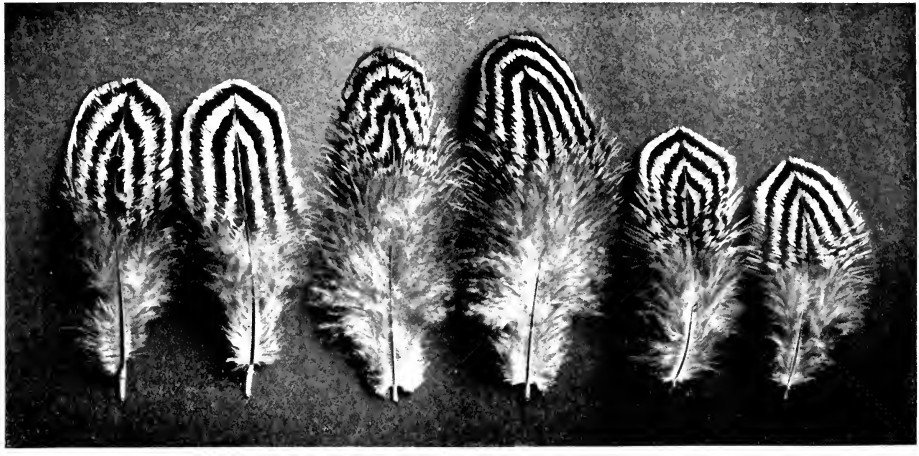
PLATE 76



1 2 3 4 5 6

SILVER-PENCILED PLYMOUTH ROCKS, FEMALE

1, 2. Wing Front. 2, 4. Back. 5, 6. Upper Breast.
1. Ordinary. 2. Idealized. 3. Ordinary. 4. Idealized. 5. Ordinary. 6. Idealized.



1 2 3 4 5 6

SILVER-PENCILED PLYMOUTH ROCKS, FEMALE

Wing Covert. Rear Back. Lower Breast.
1. Ordinary. 2. Idealized. 3. Ordinary. 4. Idealized. 5. Ordinary. 6. Idealized.

1 2 3 4 5 6

SILVER-PENCILED PLYMOUTH ROCKS, FEMALE

Front Fluff. Rear Fluff. Tail-Covert.

1. Ordinary. 2. Idealized. 3. Ordinary. 4. Idealized. 5. Ordinary. 6. Idealized.

is exposed to view when held in its natural position or, in other words, on the surface. Plate 79 shows an illustration of one of the longer secondaries.

Shank and Toes.—Shanks and toes are yellow or dusky yellow.

The best surface color in females and the best markings are associated with a lighter shade of undercolor. (T. F. McG.)

CHAPTER IV.

MATING SILVER-PENCILED PLYMOUTH ROCKS

It should be well understood that the first step for breeding this variety must be the selection for proper size, shape, and general requirements for the breed.

But, in addition to this, color must have more than ordinary consideration. There are two systems practiced in the breeding of Dark Brahmas, and the same may be followed in the breeding of this variety of Plymouth Rocks which corresponds with the former in plumage. It is needless to say more than has been said under these subjects in Part II on line-breeding, in-breeding and double-mating, or on the general laws of breeding. These three methods of single, intermediate and double mating seem open to breeders of this variety with good promise of success.

Single Mating.—The simplest and perhaps the best plan to follow is to mate together continually, year after year, the very best show specimens that are produced in each flock.

Two Female Color Types.—A system of double mating can be practiced in one pen of fowls by having a male that possesses show qualities to a marked degree mated with three or more females that are perfect or nearly perfect, according to the Standard description for the female of this variety, while in this same pen can be kept one hen or more for the purpose of producing exhibition males. This hen must be a direct descendant for at least two years, and if for longer she is much better for the purpose, from a cockerel breeding line; that is, by knowing the male and females that produce each specimen you can select the hen that produces the best cockerel and mate her or her offspring year by year with the best male that is produced from the female line referred to in Part II as the Intermediate Mating.

Double Mating.—For extreme double mating, select the hens that have produced the best exhibition males and mate them with the best exhibition males that you have or that you can secure. Toe-mark all the chicks from this mating and from them establish a cockerel breeding line; keep them separate and apart and use them only for producing male birds for the exhibition. This line should be as carefully separated as are the matings to produce cockerels in the Barred variety.

PLATE 79

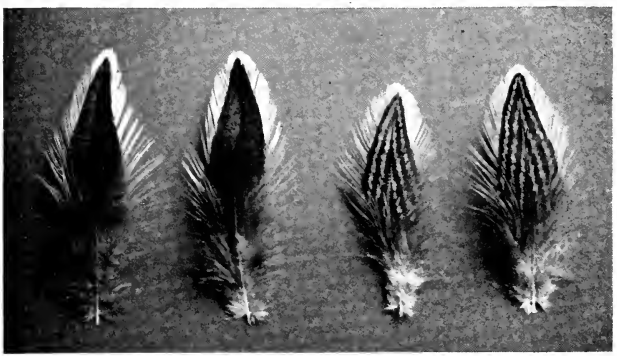
1 2 3 4 5

SILVER-PENCILED PLYMOUTH ROCKS, FEATHERS OF FEMALES

1. Wing primary. 2. Wing secondary. 3. Lower main tail. 4. Upper main tail. 5. Top tail feather
(Best obtainable.)

To produce females of the most beautiful color and markings, the best hens should be mated with a male descendant from an exhibition female. The offspring from this mating should be kept separate and be mated together continually year after year; the best females so obtained should be mated with the best males that are produced from this same line of breeding.

PLATE 80



1 2 3 4

SILVER-PENCILED PLYMOUTH ROCKS
NECK FEATHERS OF FEMALES

Solid, for producing best exhibition males.

Penciled, as seen on females, for producing females with best penciled body sections.

1, 2. Solid black stripe, necessary to produce Standard exhibition colored hackles on males.

3, 4. Penciled stripe, as found on females possessing the finest penciling over breast, back, wing and body sections, necessary to produce the best exhibition colored females.

Note:—This section, neck, presents the most marked variance in plumage of the females of the cockerel-breeding and pullet-breeding lines. A solid black stripe in hackle, especially in the lower portion of the lower or longest hackle feathers, is required and very much desired in an exhibition male. To obtain such, it is generally necessary to breed from females that possess the same character.—(Ed.)

PLATE 81

SILVER-PENCILED PLYMOUTH ROCK

Illustrating defects in color of male as follows:
Hackle—Weak in striping.
Shoulders—Irregularly splashed with black.
Wing-Bows—Splashed with black markings.
Wing-Bars—Splashed with white.
Wing-Primaries—White at root, also white at tips.
Primary Coverts—White tips.
Wing-Secondaries—White edging in upper secondaries, very irregular.
Saddle Feathers—Weak, indefinite striping.
Tail-Coverts—Stripe too weak, laced edging irregular.
Tail, Sickles and Smaller Sickles—White at root.

PLATE 82

SILVER-PENCILED PLYMOUTH ROCK

Markings on a high-class Standard-bred male:
Head, Back and Wing-Bows—Clear, silvery white.
Hackle—Each feather showing clear black striping and silvery white edging.
Wings—Fronts black; wing-bars, glossy, greenish black.
Primaries and Primary Coverts—Black, edged on lower side with silvery white.
Secondaries—Regularly bordered to form white surface, when folded, except upper wing-coverts, where black predominates.
Saddle—Each feather clearly striped with black, edged with silvery white.
Tail-Coverts—Black, edged with silvery white.
Tail and All Sickles—Glossy, greenish black.
Breast—Glossy, greenish black.
Body—Black.

PLATE 83

SILVER-PENCILED PLYMOUTH ROCK

Illustrating defective female color, as follows:

Neck feathers weak in striping.

Back, wing-bows and fluff irregularly and coarsely penciled.

Shafting showing on the wing-bows; many feathers in back and fluff not penciled; penciling lacking in secondaries.

Primaries do not show the correct gray edging; splashes of white and gray at ends of primaries.

PLATE 84

SILVER-PENCILED PLYMOUTH ROCK

Markings on a high-class, Standard-bred female.
Head—Silvery gray.
Neck—Silvery white, black stripe penciled with gray.
Wing Primaries—Black, lower edge penciled with gray.
Tail Proper—Black, penciled with gray.

All remaining plumage silver-gray, with distinct dark pencilings, outlines of which conform very closely to shape of feathers. The light and dark pencilings as nearly as possible equal in width, giving a steely gray effect, free from buff or brownish color in any part.

The chicks from both these lines must be toe-marked for identification. The males and females from the one line must be used for breeding cockerels and cockerel-breeding pullets; the males and females from the other line for producing exhibition females and pullet-breeding males.

Whenever it may be necessary to introduce new blood into either one of these lines, the best hen that can be secured from an outside strain that produces good specimens can be introduced into the flock. She can be mated first with the male breeding line and a clutch of eggs secured, which can be hatched and reared by a mother hen. The best females produced from this mating should be mated back to the male that produced them. If good specimens of both male and female come from the second mating, it will be safe to breed this new line into the cockerel line that has been established. From the same hen mated to the best pullet-bred cockerel eggs may be secured and hatched in like manner, and the best pullets from this mating re-mated to the male that produced them. The offspring produced from the second mating may be bred into the pullet-bred line. (T. F. McG.)

CHAPTER V.

PLUMAGE DEFECTS AND HOW TO OVERCOME THEM

The influence of the Partridge Cochin that was bred years ago into the Dark Brahma, and that of the Partridge Cochin bred into the Penciled Wyandottes have cast their shadow over the plumage of all American varieties of silver-penciled fowls. Although the cross of the Partridge Cochin was made with the Dark Brahmas almost fifty years ago, the shading of reddish-brown continues to come into the plumage of both the male and the female of the Dark Brahmas, and while there is much less now than formerly, it still exists.

The cross of the Partridge Cochin with the Penciled Wyandottes came in the original process of the penciled varieties. A female of the Golden-Penciled or Partridge variety was crossed into the Silver-Penciled variety to improve color and markings. This was the mistake that was made by one of the most successful breeders, and the one who is credited really with the best accomplishments toward the establishment of Silver-Penciled

Wyandottes. The Silver-Penciled Plymouth Rocks having descended from the same line of breeding, carry with them more or less of this influence, from which reddish-brown or brick color is, at times, found in the plumage. This color shows much more plainly in both the male and female while they still have their chick feathers.

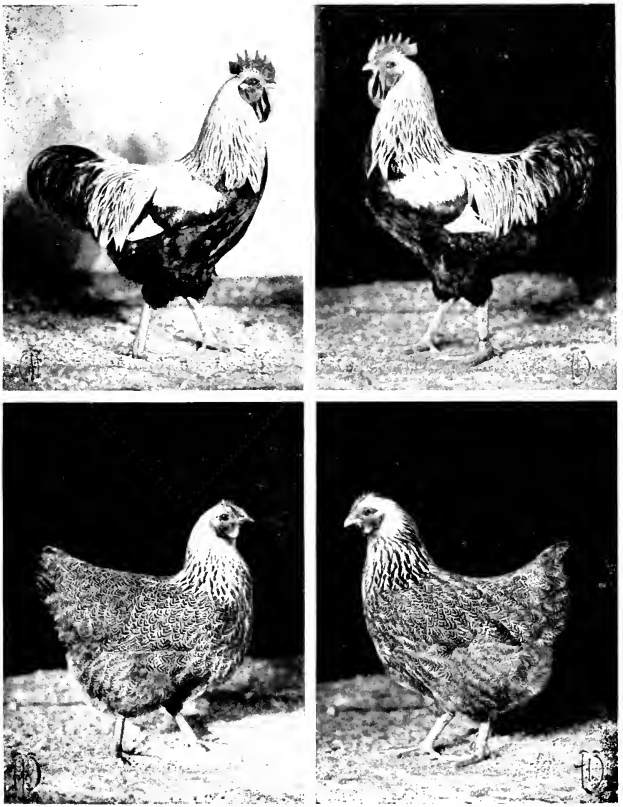
Perhaps it is this same influence that brings brassiness in males and dark shading in the shanks of both males and females. Both of these defects are to be deplored; yet they exist, and it requires considerable care and judgment to prevent their increasing or to keep them entirely out of the plumage of both sexes. Brassiness in the top plumage of the males detracts considerably from their appearance, and renders them unfit for use in the breeding pen. This same influence makes it more difficult to produce clean, clear gray or silver gray in the female.

Other defects that must be avoided are: Too much penciling in the neck feathers of the female, any penciling in the neck of the male, and too much white in the wings of the male. Some of the best females of this variety have almost as much penciling in their neck feathers as in the body plumage; this shows an excessive amount of penciling and detracts from their quality as exhibition specimens. Such females may be safely bred to a male not so strongly penciled and they may produce females better than they are themselves; but there is danger from the use of such females, because, where the lines are not kept perfect, injury may be done to an almost perfect male breeding strain by bringing this penciling into the neck and plumage of both the male and the female of that strain. There is also danger of losing the desired penciling in the females unless the lines are kept true to blood.

White in Wings.—Too much white in the feathers of the wings of the male is apt to come from the female line, especially so if light gray or white undercolor is present in the female plumage. To produce males with almost perfect wings requires the use of both males and females that have slate undercolor. See illustration, Plate 81.

The Lower Fluff.—Perhaps the most difficult problem is to obtain females with even fairly good penciling in the fluff of the plumage that covers the abdomen. To have this to any extent requires extreme care and watchfulness of the breeding lines

PLATE 85



SILVER PENCILED PLYMOUTH ROCKS

Typical modern winning males. Typical modern winning females At Madison Square Garden, New York, Dec. 29, 1916-Jan. 3, 1917.

2nd Cock. 1st Pullet. 1st Cock. 1st Hen.

with the object of producing beautiful color markings or pencilings in the feathers throughout the entire body.

The Tail Feathers.—Some of the most exquisitely penciled females, especially in the Dark Brahmas, have gray markings in the greater part of all the main-tail feathers. In some instances these pencilings will show in the smaller sickles and coverts of the male, as well as in the breast and body plumage. These same defects will show in the Silver-Penciled Plymouth Rock males that are bred strongly in the female producing line, and while such are excellent for breeding pullets, they would not be likely to win prizes in the show room. (T. F. McG.)

One of the best examples of the possibility of penciling in the neck plumage will be seen in the illustration of the Dark Brahma female, in the Standard of Perfection of 1915. Less of it is shown in the Silver-Penciled Plymouth Rock female of the same Standard; and while the Standard prescribes that the central portion of the neck feathers of the female shall be black, slightly penciled with gray, the illustrations themselves admit that more of this may come than is described by the Standard description. See illustration, Plate 80.

(Note.—There is a growing tendency among breeders of both Silver-Penciled and Partridge varieties to allow the penciling in the neck feathers of the female to become stronger and more pronounced, provided they secure the desired penciling on the feathers of the other sections. The art of breeding correct penciling is very similar with both colors, the Silver-Penciled and the Partridge, and most of the lessons taught in either chapter in this work may be applied to the breeding of either of the penciled varieties.—Ed.)

SECTION VI.

CHAPTER I.

PARTRIDGE PLYMOUTH ROCKS

ORIGIN AND EARLY DEVELOPMENT

THE rich, warm colors as exemplified by the red and black color patterns of the Partridge varieties of our Standard-bred fowls never fail to win the admiration of all lovers of the beautiful in animal life. The combined warmth and richness of the brilliant-red and glossy-black of Partridge males is quite sufficient to arouse the interest of any person who has the slightest admiration for feathered pets. None the less attractive, and to many even more so, are the unique and strikingly beautiful markings of the female sex in the charming contrast of rich mahogany-brown and black.

Further consideration of the intricacies of this color pattern increases the interest of the student at a pace which accelerates the more rapidly as these complexities are understood. The breeding problems, especially when breeding is pursued for any length of time and with any degree of success, become so all-absorbing that many continue the fascinating work for life or until some vital occurrence prevents.

It is not strange, then, that we find admirers of several breeds of acknowledged intrinsic merit, of which the Plymouth Rock is an example, endeavoring to make what is known to be serviceable, beautiful at the same time by transcribing the color and markings of the oldest and best known exponent of this particular type of beauty, the Partridge Cochin, to breeds of different types and temperaments. Such was the incentive behind the originators and early breeders of Partridge Plymouth Rocks, though to accomplish this self-imposed task they adopted different methods and used somewhat different means.

The Origin.—It is always difficult to say just who was the first to begin the development of any breed, for in nearly all instances several breeders are imbued with an idea at about the

same time. Only a few months or, at the most, a year or two separates them at the starting points. It takes several years to attract popular attention, and by that time a matter of a year or two in priority is difficult to determine. After the advent of the Partridge Wyandotte it was but natural that a Partridge Plymouth Rock should suggest itself to some one; and if to one, why not to several persons? And that appears to be just what occurred, for we find records of two or three early strains that were developed in the East, and one that was originated and developed in the West, all of which became very prominent. The incentive in the latter case was the admiration or love of the originator of this strain for the Partridge plumage combined with the desire or necessity of keeping a variety that would develop flesh rapidly and that would produce large egg yields. This line was originated, developed, and bred for many years by S. A. Noftzger of Indiana, and for the following facts and particulars we are indebted to him.

(Note.—We find this story corroborated in several other publications. See catalogue of Mr. M. N. Perkins of Freeport, Illinois.)

THE NOFTZGER STRAIN

Acting upon the incentive just related, Partridge Cochin females of scanty leg-feathering, which had proved to be great layers, were selected as the foundation from which to derive the Partridge plumage. The first cross was with a Cornish male, then called Indian Game. The following account is given in Mr. Noftzger's own words, excepting for a few minor alterations in language.

The Original Cross.—"The first matings were made in 1898, and consisted of scantily feathered Partridge Cochin females and Indian Game males. The female offspring from this first cross were mated (in 1899) to Golden Wyandotte males, most of which were single-comb sports. The young of this second cross were then, in 1900, mated back to the opposite sex that were bred from the original scantily feathered Partridge Cochins.

"The result of the first cross was quite satisfactory in some respects, but simply disheartening in others. It was wonderful how the feathers disappeared from the shanks, some of the first cross being almost free from feathers on legs, but nearly every one had the shape and high station of the Game, besides the

males were almost black in hackle and saddle, and the females inclined to open lacing.

The Second Year.—"How to overcome these defects was the problem of the second year. In order to get brighter color, Golden Wyandotte males were used, even in preference to Partridge Wyandotte males, because the latter were then so dark and devoid of bright color as to make them very undesirable to use with fowls already too black. The majority of these were good in eyes, legs and top color. They were mated principally in pairs and trios, but one or two of the most desirable males were given an extra female. Some of these cockerels had fairly good combs, but most of them either had side sprigs or very irregular combs with too many serrations.

"The results from the second year's matings were surprising. The cockerel line had been improved at the expense of the female penciling. For the first time clay breasts appeared in plenty among the females, but now fowls with even stubs were not much in the majority, and shape as well as male color, except in breast and body color, which were somewhat mottled in many cases, was greatly improved.

The Third Year.—"Aside from color difficulties much trouble was found in selecting enough breeding fowls with fairly good combs for the third year's matings, for it was fully determined to use only the foundation stock. For, while some of the matings of the past year had resulted in fairly good colored birds of one sex, there were but few that improved the color in both sexes (reader should note here the first inclination to single matings) and strange as it may seem, most were troubled with stubs on shanks and toes.

"The third year nine matings were made, but as all the progeny of three pens were sent to market we have to do with but six. It might be well to add that each subsequent year the number of matings that figured in the production of the Partridge Plymouth Rock fowl had a tendency to grow less, showing conclusively the wisdom of carrying as many matings as possible at the early stages of a new breed of parti-colored fowls. For the originator must become more critical and may eliminate the offspring of whole pens in order to advance rapidly. In time it is wise to reject some of the parent fowls for breeders, but not until the desired characteristics are somewhat established, and only close observation can assist in determining when to do this.

Produced Exhibition Quality.—"The progeny of the six fairly successful matings of 1900 showed better color of both sexes as a rule and some improvement in comb. At the end of this season several specimens of each sex were exhibited at small poultry shows, attracted some attention, and several sales were made.

"Realizing the necessity of a sufficient number of matings in order to improve rapidly, ten pens were mated in 1901, using cock birds and hens for the first time. Special attention was given to shape in these matings, with the result that little advancement was made in color, but the improvement in shape was noticeable. This year was quite discouraging, and much of the stock was marketed. On the other hand, there was considerable interest shown in the Partridge Plymouth Rock and a number of matings were sold. Some of the very best of these were placed in this vicinity, as it was evident that their offspring might subsequently be of value in getting 'new blood' for future matings.

More Satisfactory Results.—"A few of the fowls produced in 1904 were quite satisfactory. There were now some pretty good colored males and fair colored females. As a whole they were much better in Rock shape than previously. Several birds were sold for breeding purposes.

"For 1905 six matings were made, using two of the cock birds which had proved to be fine breeders, and four cockerels, two each from these two cock birds. With each male were from two to four females. In one of these pens a single-comb Partridge Wyandotte pullet was placed, keeping her eggs separated and carefully marking all her chicks, as had been done with all from the beginning.

"The result this year showed that blood began to tell, for the males not only improved, but there were actually some good Partridge colored females, while with the exception of the chicks from the Wyandotte sport they were fairly good in shape. These youngsters were culled down very closely, although real culls were now in the minority, and every chick with stubs, with other than good shape or with a poor comb was discarded. The chicks from the Wyandotte sport, together with their mother, were all disposed of, as most of them had dark legs and very few of them even passable shape, so they were considered worthless as breeders.

"At minor shows where a few of the best specimens were placed on exhibition, the judges complimented their quality, and

for the first time encouragement was received from expert authority. This year inquiries came for the new variety, and some nice specimens were mated and sold at good prices. During the year Partridge Plymouth Rock fowls were shipped to five different states.

Quality Is Established.—"Eight matings of quite respectable quality were made for 1906. The breeders were actually selected for standard requirements and in several of the pens as many as five females were used. Even this number indicated great progress. Those now chosen were of good shape and color, and had good bay eyes, as a rule. Owing to the foundation stock used, no difficulty had been experienced with leg color, so the chicks showed on the whole by far more improvement than at any previous year and were quite even in quality. Breeding fowls for next year were selected from all these pens. Interest in the new fowls was growing rapidly, sales increased proportionately and show birds began to sell.

"For 1907 ten pens were mated, using sixty females, and the new breed made the greatest progress in its history. This was natural, however, as several of the matings were headed by males richer in color than the Wyandottes, and the females were the equal of the other breeds in this respect, while in eyes and legs the new breed was better than either Partridge Cochins or Partridge Wyandottes. From these matings many fine specimens were produced.

"In one flock of youngsters, hatched from April first to April fourteenth, 1906, there were just twenty-four pullets, the quality of which was such that every pullet was used for breeding purposes.

"For 1908 fourteen matings were made. These pens produced over a hundred choice show fowls, besides numerous winners for minor shows, and a number of fine show birds won in the hands of fanciers at America's leading exhibitions. Judges unhesitatingly approved of them. There might have been a shorter road to success. It may be that the Partridge Plymouth Rock could have been produced in less time, by simply taking the American Partridge Cochin and breeding the feathers from the shanks, selecting from time to time the specimens with least feathers on legs for the breeders. It is noticeable that as the feathers disappear from the legs of fowls there is a tendency of the cushions and the depth of breast to go with them so that it would have been comparatively easy to have perfected Plymouth Rock shape in this way. Or, at the start,

by taking Partridge Wyandotte Sports, the path might have been temporarily strewn with roses at many places where there were thorns only, but in that event we would not have had the true Partridge Rock today."

THE EASTERN STRAINS

While this new variety was being developed as related above in the West, Indiana being regarded in New England and New York as the West, in consequence of which the Noftzger strain is known in the East as the Western strain, it was also undergoing the ordeals of a formative period in the eastern states, New York and Pennsylvania surely, if not in others.

George H. Brackenbury of Auburn, N. Y., who was so prominent in the origin and development of the Partridge and Silver-Penciled Wyandottes, in the American Fancier of January, 1900-1901, credits E. O. Thiem with being the first to breed this variety, but states that he had some time before discontinued and gives real credit to Dr. W. C. Crocker of Foxboro, Mass., with being the first to establish a true strain of Partridge Plymouth Rocks. W. F. Fotterall, the owner of Hillcrest Farm, also credits the same party, but states that the first he ever saw were shown by R. G. Bluffington of Fall River, Mass. Mr. Buffington's name appears in other pages of this work as one of the originators of early breeders of Buff Plymouth Rocks. Originating or developing a new variety was a constant occupation of Mr. Buffington's throughout life.

The Dr. Crocker referred to relates his experience in the Poultry Tribune of 1904. From this it appears that he had bred Partridge Cochins in the early seventies, 1870, and while he admired their plumage, he came to the conclusion that he wanted an up-to-date American fowl and formed a conception of his ideal. As he told it, "It was one with the beautiful plumage of the Partridge Cochins, but without feathers on the shank to be draggled in the mud and filth, and second, my ideal fowl must be an active, up-to-date, wide-awake American fowl, and not so lazy that it had to be put to bed on the roost every night."

"For some years I dropped the poultry subject, but in 1899 I again took up the matter, and this time determined to make what I wanted. For this purpose I procured a trio of Partridge

Cochins, and after some comparison of notes with Mr. Richard Hooper, who was breeding Partridge Cochin and Brown Leghorn crosses, I went to the Boston Poultry Show for 1900, and while there was surprised to find that someone had anticipated my plan, for there was first shown by Messrs. Cornell and Brackenbury, the beautiful new variety that Mr. Brackenbury had bred, with the plumage of the Partridge Cochin. In talking to Mr. Brackenbury I revealed to him my plan for a Partridge Plymouth Rock, and later procured from him and from Mr. Cornell all the single combed sports from their Golden Penciled Wyandottes. These single combed sports were bred with a half-blood Partridge Cochin male that Mr. Brackenbury bred from his stock, and also with a cross-bred cockerel of Mr. Hooper's stock, bred three-fourths Partridge Cochin and one-fourth Brown Leghorn. From these matings I have bred some very fine specimens of a Partridge Plymouth Rock—an American type of fowl with the clean shanks and the beautiful Partridge Cochin plumage. I have also bred a strain in connection with Hooper from my trio of Partridge Cochins of 1900, and an Indian Game cockerel bred by Mr. Charles D. Cotton. From this strain we now have some very fine specimens with very rich plumage. My strain of Partridge Plymouth Rocks are now bred closely as follows: Golden Penciled Hamburg, 1-16; Golden Laced Wyandotte, 2-16; Brown Leghorn, 1-16; Partridge Cochin, 12-16."

From these accounts it appears that the honor of originating Partridge Plymouth Rocks is really divided between the Eastern and Western strains, as they were afterwards known, or the Crocker and Noftzger strains. According to these accounts, Mr. Noftzger made the first mating with a Partridge Plymouth Rock in mind only one year before Dr. Crocker began breeding with the same ideal in mind. We are very fortunate to have these accounts by the originators themselves, preserved in such a manner that certain uncertainties that hang over the ancestry of some of our American varieties do not obscure the lineage of this one.

One strain is Partridge Cochins, Dark Cornish and Golden Wyandottes together, while the other is a composite of Partridge Cochin, Golden Wyandotte, Brown Leghorn and Golden-Penciled Hamburg blood. The former would seem to be superior in flesh and the latter in laying qualities, as it has the blood of two of the best of laying breeds in its makeup. Part-

ridge Cochin blood was so predominant in both, however, that one should expect a very great resemblance to that variety in form as well as in color.

OTHER EASTERN STRAINS.

Though not real originators, but still so intimately associated with the early development of this variety and so nearly contemporary with the originators that they are classed as pioneers, are several other breeders who were making Partridge Plymouth Rocks by methods of their own very soon after Crocker and Noftzger had started theirs. Among these, the most prominent, perhaps, and one that was exhibited constantly until very recently, was the Hillcrest Strain.

THE HILLCREST STRAIN

This strain was created and developed by W. F. Fotterall, of Philadelphia, on his estate at Oakland, Pa. Mr. Fotterall states that prior to 1902 he had tried to produce Partridge Plymouth Rocks by several different crosses. Finally, two crosses, first, Brown Leghorn and Partridge Cochins, and second, Barred Plymouth Rocks and Partridge Cochins were made, and the progeny mated together the following year. The females obtained from this mating were then mated with a cock bird that was a cross of Brown Leghorn and Partridge Cochin.

At this stage Mr. Fotterall bred birds obtained from Buffington and others with his own up to within less than a decade.

THE HAGEMAN STRAIN

Mr. J. A. Hageman, of Michigan, originated and developed what he termed a laying strain of Partridge Plymouth Rocks early in the history of the variety. According to his account, his strain was developed by amalgamating the result of a cross of Partridge Cochins and Brown Leghorns made by W. H. Bryan, of Brooksfield, Mich., and of another cross of Partridge Cochins and Indian Games, now known as Cornish, by Mr. F. H. Lynd, Middleville, Mich., with Partridge Plymouth Rock blood supplied from the flock of a Mr. Randall, of Mt. Pleas-

ant, Mich., which flock, however, Mr. Hageman opines is nothing more nor less than Partridge Wyandottes breeding, using, of course, the single-comb sports.

Similarity Between the Old and New Varieties.—This statement of Mr. Hageman gives evidence that the Brown Leghorn and Cornish blood cross is employed in more than one instance. This is not surprising, as the striking similarities between the plumage of the Brown Leghorn and the Partridge Cochin males and the not very unlike plumage of the females of these two varieties, taken together with the fact that the type sought, Plymouth Rock, is about a mean between the Leghorn and the Cochin, suggests very favorably the possibilities of such a cross. The possibilities of a Cornish cross, too, are clearly apparent because of certain similarities, particularly the shade of color of both male and female and the penciling of the latter, very similar in fact, though not of the required number.

It is noteworthy that each one of the originators and early breeders lays great stress on the efforts made to quickly perfect type by selecting only those specimens that were the best Plymouth Rock shape. The impression given is that type was ever given the preference over color and penciling, but to some of those who have watched the variety develop, and not only this but other penciled varieties, it appears that many sacrifices in type must have been made for the sake of true pencilings, that is, unless type refers to comb.

CHAPTER II.

PARTRIDGE PLYMOUTH ROCK PLUMAGE

STANDARD DESCRIPTION

Disqualifications

Positive white in main tail feathers, sickles or secondaries; shanks other than yellow or dusky yellow. (See general and Plymouth Rock disqualifications.)

COLOR OF MALE

Head.—Plumage, bright red.

Beak.—Dark horn, shading to yellow at point.

Eyes.—Reddish-bay.

Comb, Face, Wattles and Ear-Lobes.—Bright red.

Neck.—Hackle, web of feather solid, lustrous greenish-black, with a narrow edging of rich, brilliant red, uniform in width, extending around point of feather; shaft, black; plumage in front of hackle, black.

Wings.—Fronts, black; bow, rich, brilliant red; coverts, lustrous greenish-black, forming a well-defined bar of this color across wings when folded; primaries, black, lower edges, reddish-bay; secondaries, black, outside webs, reddish-bay, terminating with greenish-black at end of each feather.

Back.—Rich, brilliant red with lustrous greenish-black stripe down the middle of each feather, same as in hackle.

Tail.—Black; sickles and smaller sickles, lustrous greenish-black; coverts, lustrous greenish-black, edged with rich, brilliant red.

Breast.—Lustrous black.

Body and Fluff.—Body, black; fluff, black, slightly tinged with red.

Legs and Toes.—Thighs, black; shanks and toes, yellow.

Undercolor of All Sections.—Slate.

COLOR OF FEMALE

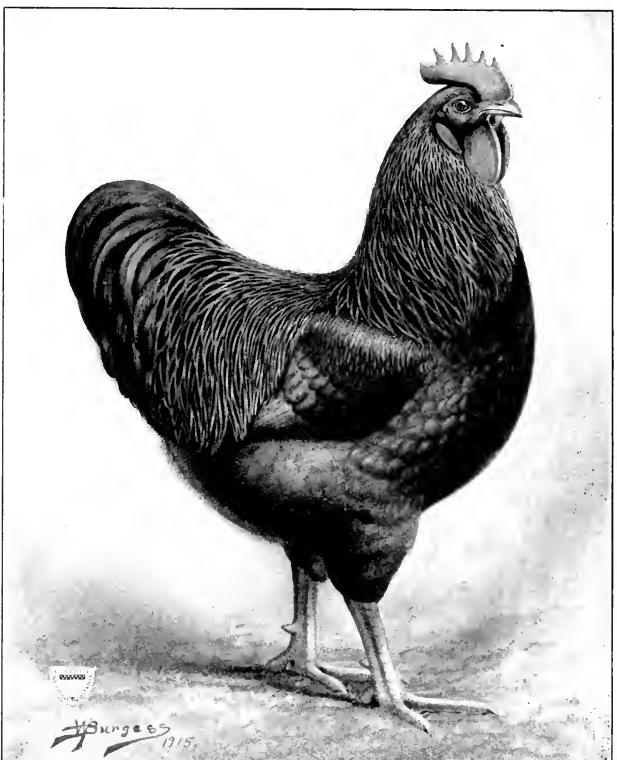
Head.—Plumage, mahogany-brown.

Beak.—Dark horn, shading to yellow at point.

Eyes.—Reddish-bay.

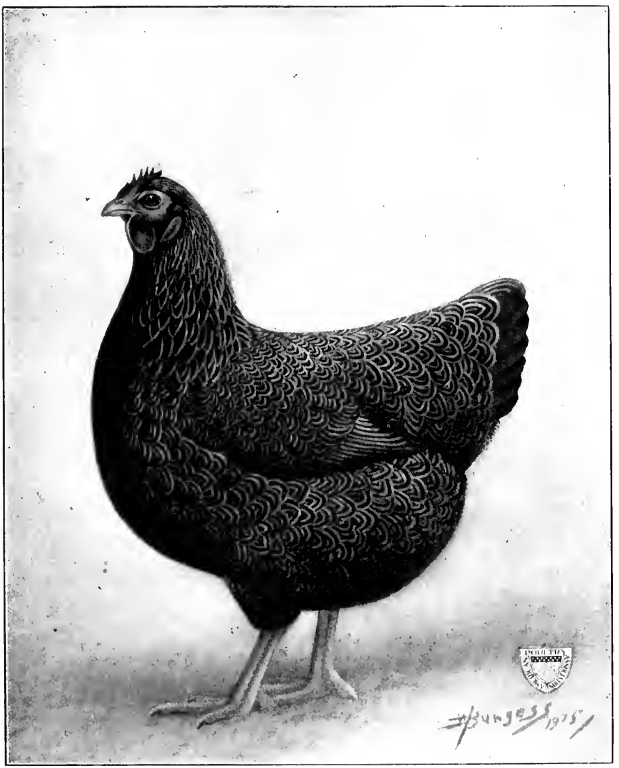
Comb, Face, Wattles and Ear Lobes.—Bright red.

PLATE 86



PARTRIDGE PLYMOUTH ROCK MALE

PLATE 87



PARTRIDGE PLYMOUTH ROCK FEMALE

Neck.—Reddish-bay, center portion of feathers black, slightly penciled with mahogany-brown, feathers in front of neck, same as breast.

Wings.—Shoulders, bows and coverts, mahogany-brown, penciled with black, outlines of pencilings conforming to shape of feathers; primaries, black with edging of mahogany-brown on outer webs; secondaries, inner webs, black, outer webs mahogany brown, penciled with black, outlines of pencilings conforming to shape of feathers.

Back.—Mahogany-brown, distinctly penciled with black, the outlines of pencilings conforming to shape of feathers.

Tail.—Black, the two top feathers penciled with mahogany-brown on upper edge; coverts, mahogany-brown penciled with black.

Breast.—Mahogany-brown, distinctly penciled with black, the outlines of pencilings conforming to shape of feathers.

Body and Fluff.—Body, mahogany-brown, penciled with black; fluff, mahogany-brown.

Legs and Toes.—Thighs, mahogany-brown, penciled with black; shanks and toes, yellow or dusky yellow.

Under-Color of All Sections.—Slate.

Note—Each feather in back, breast, body, wing-bows, and thighs to have three or more distinct pencilings.

COLOR OF THE MALE

The Desired Shades.—There are, or should be, but two colors in an ideal Partridge male and there should be but one shade of each color.

The neck or hackle, shoulder or wing-bow, back, saddle, and saddle hangers may be called the red sections, though we must understand that the Standard requires that each feather in neck, back and saddle should be striped with black.

The Correct Shade of Red.—The red is nevertheless the color that is responsible for our first impression because it is visible at as great a distance as the bird itself. For this reason, the correct shade of red for the sections enumerated above will be first considered. To use the words of the Standard, these sections should be "rich, brilliant red." The term "rich" as used in such a connection is taken to mean deep, or dark, perhaps. This description would exclude a light, thin, or shallow color, such as orange shades which would not meet the requirements. The word "rich" alone might also, as understood in this connection, lead us to produce some very deep or dark shades of red

but for the fact that when the red becomes too dark it obscures the black striping in hackle and saddle which, in the eyes of most breeders and fanciers, mars the beauty by diminishing the brilliancy of the plumage. For this reason, the modifying word "brilliant" is included in the Standard description. When the red becomes so dark in shade that it obscures the black striping, it becomes dull—perhaps dingy describes its appearance more fittingly—and the color is therefore no longer brilliant and fails to meet the Standard description, which prevents variation within these limits that, either the red must have body enough or must be dark or deep enough to be "rich," but not so dark that it is not "brilliant."

The red shade which is preferred is perhaps difficult to describe, and perhaps it is fair to make a statement to the effect that there is one opinion as to the shade of color among breeders, as to state that all the males are of one shade in plumage. The "rich, brilliant red" demanded by the Standard certainly gives a positive idea as to color, but one cannot from this description settle upon an exact shade that is to be preferred to all others. From the word "rich," one is justified in ruling against the yellowish shades of red, and because of the "brilliant," one can conclude that too dark or dull shades are not to be given preference. It seems that what we might, for lack of a better term, designate as a "happy medium," is perhaps the desired shade, for all agree that the yellowish shades are not desired and very dark shades make dull and unattractive plumage. As a guide as to whether the red shades are becoming too dark or not, the degree in which they obscure the black striping in neck, back and saddle may be considered. A sufficient contrast between the red and black to enable the observer to distinguish between them, upon fairly close inspection only, should be maintained.

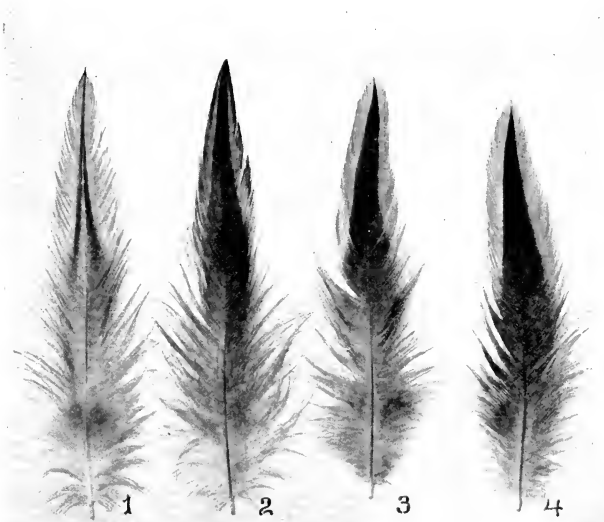
Correct Striping.—In order to maintain the desired contrast, two essential color characteristics must be maintained. First, as already pointed out, the red must be of the desired shade and not too dull. Second, the black stripe must be a lustrous, greenish-black, sometimes described as a metallic black.

Neck.—The striping in this section should be sound, that is, unbroken; as explained, the stripes should possess a greenish lustre and should be found even in the smaller feathers near the head. Too often, only the larger and longer feathers at the base of the neck are thus striped.

Broken stripes are often seen and very often in males that are from well-penciled females. This is another characteristic that breeders who are endeavoring to produce strongly penciled females like to see in a male because it indicates strong penciling in the ancestry. It is not an exhibition quality, however, especially when it appears near the lower end of the feather. (See illustration, Plate 88.)

The Border.—Brilliant red should run evenly down the side of that portion that is known as the surface, and also around the end of each feather. That is, the black stripe should terminate in a V-shaped point near the end of each feather, not at the

PLATE 88



PARTRIDGE PLYMOUTH ROCKS, HACKLE FEATHERS

(From different individuals.)

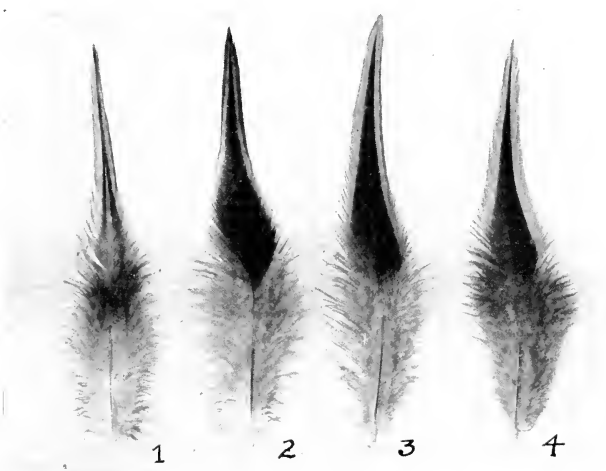
1. Weak Stripe. 2. Too dark, black running into fringe. 3. Fairly good. 4. Idealized.

end. Black often runs through to the border, forming a black edge at the tip. This is undesirable, and while a little black edging will be tolerated for the sake of strong striping, any noticeable amount is discounted heavily. Occasionally a male, that is otherwise very good indeed, will have a neck so very strongly black that a ring of this color is formed at the base, where it meets the shoulder. This defect alone makes a male practically worthless.

The shafts, particularly in the lower portion of the feathers, should be black.

Back and Saddle Striping.—In this section, the same markings and the same shades of color as in the hackle should be

PLATE 89



PARTRIDGE PLYMOUTH ROCKS, SADDLE FEATHERS OF MALES

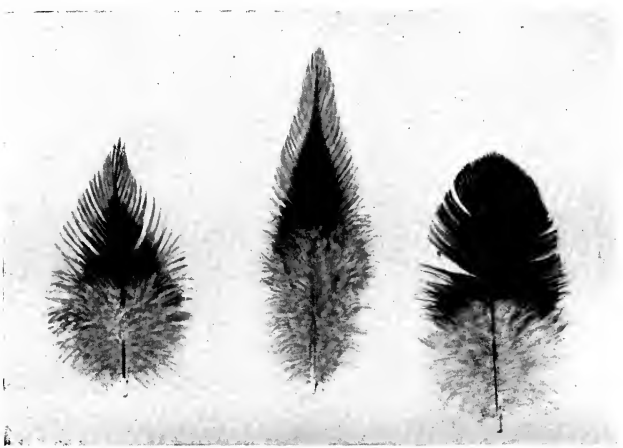
(From different individuals.)

1. Weak stripe. 2. Too dark, black running into fringe. 3. Fairly good. 4. Idealized.

found. The striping in the broad feathers of the back will, of course, and should be much broader than those in the hackle. The striping on the narrow feathers of the saddle will be narrower, but both should be sound, that is, unbroken and possess that metallic luster which creates such a pleasing contrast between the rich red and the lustrous black. The same statements about the character of the striping and the relations between the borders, edging and color of the shaft that were made about the hackle, apply to the back and saddle. (See illustration, Plate 89.)

The Wings.—The shoulder is rich, brilliant red without black markings and, as stated, should be of the same shade as the

PLATE 90



1 2 3

PARTRIDGE PLYMOUTH ROCKS, SHOWING DIFFERENT PLUMAGE OF WING-BOW, BACK AND BREAST OF MALES

1. Wing Bow. Black, broad, arrow-shaped marking at base of web. Web and fringe rich, brilliant red.

2. Back. Broad, black stripe of black, well-pointed, following quill nearly to tip. Fringe, rich brilliant red.

3. Breast. Lustrous greenish black. All underfluff, slate color.

other red sections. Very often it is of a deeper shade, which fault must be corrected as far as possible by breeding. The coverts are greenish-black, forming a well-outlined bar across the wing. This line between the wing-bow and wing-bar is one of the beauty points of the male if it is distinctly outlined, as it should be. When seen at its best, this line is not only sharply defined, but very regular in outline, either running straight across the wing or curving slightly; either line if regular and distinct is very beautiful. The wing-bay should also be sharply defined, though but little difficulty is experienced in this particu-

PLATE 91

1 2 3 4

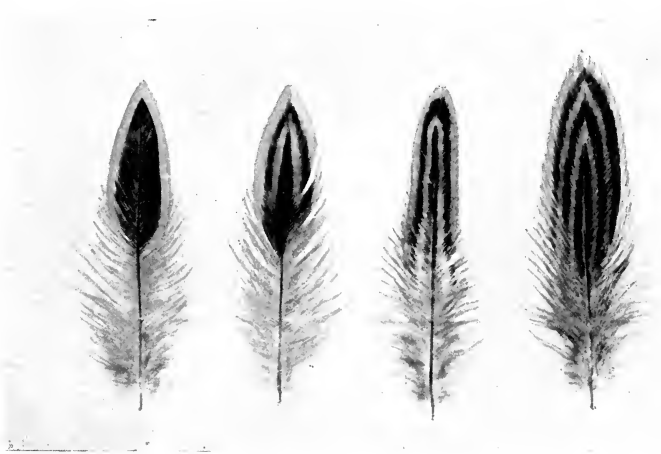
1. Primary. 2. Secondary. 3. Top main-tail. 4. Main-tail.
FEATHERS OF PARTRIDGE PLYMOUTH ROCK MALES

N. C. State College

lar. The wing-bay is about the same shade as the shoulders, but seldom shows luster and frequently is lighter than the other red sections. (See illustration, Plate 86.)

The wing-bows should be of the same shade of bright, rich red that is found in head, neck and saddle sections. The fronts of the wings should be black, showing a decided greenish luster; the primaries black with the lower side of the feathers edged with bay; secondaries, upper part black and lower side with sufficient bay to form a beautiful triangle when wing is folded. The end of each of the secondaries should terminate with greenish black. (See illustration, Plate 91.)

PLATE 92



1 2 3 4

PARTRIDGE PLYMOUTH ROCKS, PATTERNS OF MARKINGS FOUND IN NECKS OF FEMALES

1. Solid, single stripe down center, edging of reddish bay, most desirable for breeding exhibition males.
2. Double penciling, solid center stripes, edging reddish bay.
3. Double penciling, light colored quill, edging reddish bay.
4. Triple penciling. Quill red in undercolor, edging reddish bay, most desirable in females for breeding exhibition females.

Legs and Toes.—The thigh is, of course, subject to the rule which governs the other black sections. The legs and toes should be yellow, but some of the richest colored and best penciled strains still show dark color on the shanks and toes.

The Lower Sections.—The under sections, breast, body and fluff, should all be lustrous, greenish black. The best example of what the color of these sections should be will be found in the tail, which is most often highly lustrous. Brown is permitted in the fluff and is often seen in the rear body feathers. Breeders rather like its presence in the latter section as it seems prevalent in lines or strains that produce strongly penciled females.

The faults of the black section are purple sheen and bronze bars, both of which are highly objectionable. This will be well understood after consulting the chapter in the Standard on "Cutting for Defects."

THE COLOR OF THE FEMALE

The novice would hardly regard the female of the Partridge varieties as of the same variety as the male, so different are the males and females in both color and markings, and we must note at once the change in the Standard color requirements from the rich, brilliant red of the males to the mahogany-brown of the females.

The Color of Female.—The Partridge female is or should be most uniform in color of all plumage, as one description answers for all sections of plumage except the neck. Mahogany-brown penciled with black is the color description for all sections. The head is mahogany-brown, much like the body sections. Only for the neck do we find a different color description and a different color term, golden bay.

Penciling surreptitiously appears in the neck, the one lone section in which it was not required. The beauty of the neck, according to the old ideal, was thus sacrificed to contribute to the beauty of the other sections. That being the object, ideals as to the particular form and number of pencilings have become very definite or exact. If these conform to the shape of the feather, without any breaks, so much the better, but regularity in penciling is usually given but slight notice, so if the neck has a single penciling, well and good, if as a rarity, two, so much the better. On a small feather the three that are required can hardly be expected and but rarely occur.

The plumage is uniform in pattern in nearly all sections, that is, nearly all the sections are alike in color and markings. Only the neck and larger feathers of wing and tail are exceptions to this, and even these features show a tendency to follow the color patterns of the feathers of the other sections. This tendency is very pleasing to all breeders of penciled varieties.

PLATE 93

PARTRIDGE PLYMOUTH ROCKS, DIFFERENT PATTERNS OF PENCILING ON WING SECONDARIES OF FEMALES

1. On lower (left hand) edge, nearly parallel, then turning irregularly outward to edge, on upper side breaks up into irregular cross penciling, which should be nearly solid black except near end of the smaller upper secondaries.

2. Is barred instead of penciled parallel to edge.

3. Penciling runs parallel to edge nearly all through lower (left hand) web. Approaches ideal marking.

PLATE 94

PARTRIDGE PLYMOUTH ROCKS, SHOWING THE DIFFERENCE IN MARKINGS OF PRIMARIES AND SECONDARIES OF MALES AND FEMALES

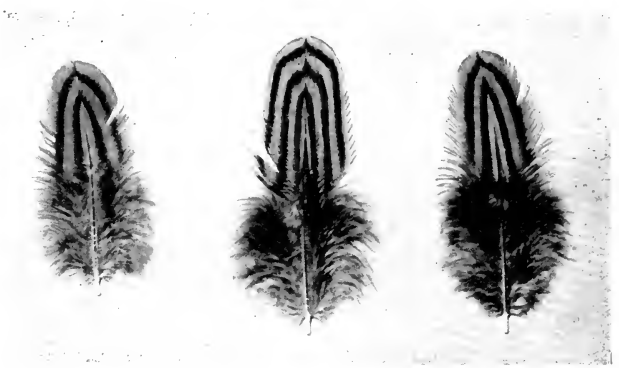
Male: 1. Primary. 2. Secondary. Exhibition specimens.
Female: 3. Primary. 4. Secondary. Exhibition specimens.

and proportionately as such a tendency manifests itself. (See illustrations, Plates 92 and 93.)

The Desired Shade.—This must, of course, be carefully considered. For the color of the wing-bow, secondaries, back, tail-coverts, breast and body, the Standard requires a rich, mahogany-brown. Obviously, this term allows some latitude for individual preference and, as the writer looks at the matter, there is no objection to that, rather the contrary, because it will be a regrettable occurrence when color requirements are made so arbitrary that breeders cannot play their fancies within reasonable limits in this particular. Furthermore, judging for color may be overdone and very easily, as frequently has been the case when the Standard has described the color over-exactly.

We may state, then, that the shades of mahogany-brown as they appear even upon different winning individuals vary somewhat, some being a little lighter, approaching, perhaps, a deep orange-red, others being very much darker or richer, the latter being the term commonly used by breeders and exhibitors of these varieties. The lighter shades are popular with some be-

PLATE 95



1 2 3

FEATHERS OF PARTRIDGE PLYMOUTH ROCK FEMALES, IDEALIZED

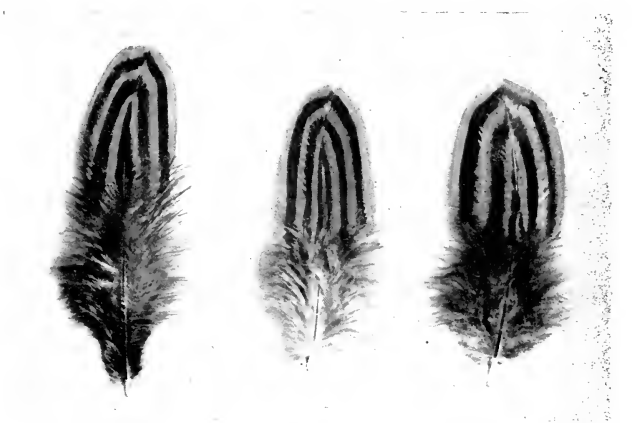
1. Upper breast. 2. Lower breast. 3. Back.

cause the darker pencilings are, on account of greater contrast, more prominent. Though this feature is conceded an important one by all, others favor the deeper and richer, that is, the darker shades which undoubtedly are regarded with greater favor by a majority of breeders, exhibitors and judges. This is an indication that the deeper shades in the eyes of a greater number are more beautiful.

Pencilings Required.—The markings of the sections named in the preceding paragraphs are known among breeders and described in the Standard as pencilings. Of these, we have two forms; the crescentic, the pattern which conforms to the outline of the feathers, and the straight across, which runs at right angles with the shape of the feathers. The pencilings of the Partridge feathers take the crescentic form. (See illustration, Plates 95 and 96.)

That these pencilings should be distinct and regular is the crowning ambition of all breeders of all Partridge varieties.

PLATE 96

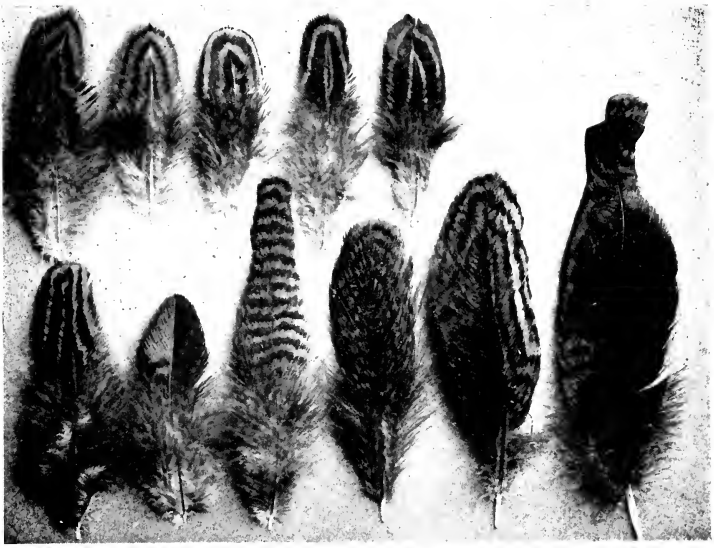


1 2 3

FEATHERS OF PARTRIDGE PLYMOUTH ROCK FEMALES, IDEALIZED

1. Cushion. 2. Wing-bow. 3. Wing-bar.

PLATE 97

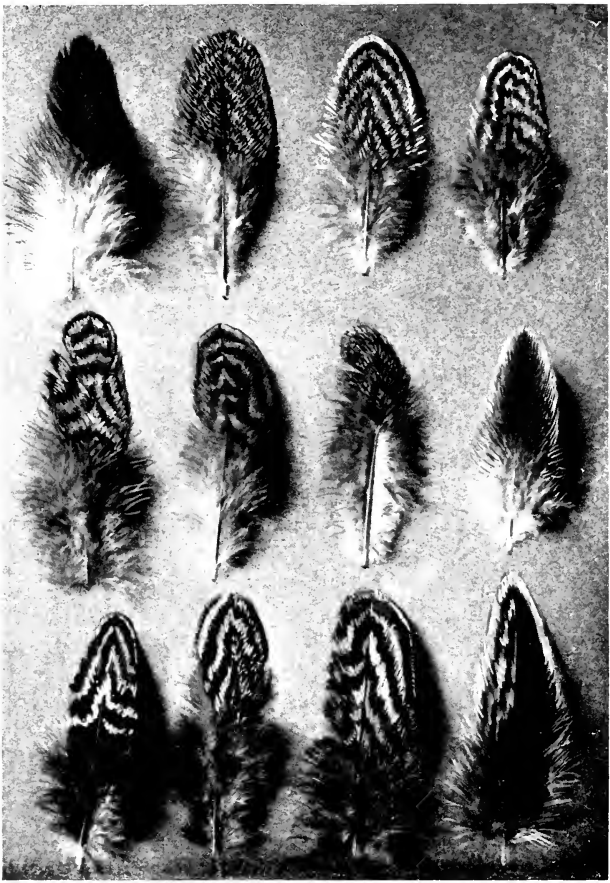


PARTRIDGE PLYMOUTH ROCK FEMALES, VARIOUS PATTERNS OF PARTRIDGE MARKINGS DEFECTIVE FEATHERS FROM FEMALE

UPPER ROW LEFT TO RIGHT—1. Shows about the right proportion of brown and black. The break in outline of the center penciling is a defect. 2. Too much brown. Outlines of pencilings good. 3. Too narrow brown pencilings. Too few pencilings, being two only. Center penciling badly broken. 4. Brown pencilings too narrow, and too few, leaving too much of the web black. This is one example of coarse penciling. 5. Slightly different form of number four.

SECOND ROW, LEFT TO RIGHT—6. Brown pencilings, too narrow and very faulty in outline, do not follow the outline of feather. 7. Brown penciling entirely absent. 8. Brown penciling straight across, not the crescentic shape. Usually seen on young pullets before adult plumage is developed. 9. A long feather near the junction of back and tail, showing penciling without the crescentic form, more resembling coarse striping than penciling. 10. Top, main-tail feather, showing irregularities in penciling on upper web. Also, penciling on lower web not required by the Standard, therefore a defect technically, though not objected to very seriously, if at all, by breeders. 11. Main-tail feather showing brown patches and little penciling. Main-tail feathers, except the top ones, should be black.

PLATE 98



PARTRIDGE PLYMOUTH ROCKS, EXAMPLES OF DEFECTS IN PLUMAGE OF EARLY SPECIMENS OF THE VARIETY
Showing different forms of irregular pencilings in different sections.

Many qualities are sacrificed to obtain these peculiar and unique markings. Even the shade of color is of secondary importance, and it is a noteworthy fact that the longer one breeds this variety, the more he admires and strives to produce these pencilings in the highest state of perfection; and in natural consequence, wing or curving slightly; either line if regular and distinct he comes to regard the exact shade of mahogany as of correspondingly less importance. (See illustration, Plates 97 and 98 for examples of irregular penciling.)

The Markings Required.—As already stated, these should conform to the outline of the feather. This is true of the surface of the feather, and a little below. The undercolor or fluff should be a slaty color.

The Undercolor.—Formerly, considerable importance was attached to the shade of slate below the surface, but of late little attention is paid to that feature. The regularly and strongly penciled surface is what is desired—and for undercolor? Why, take whatever comes with the surface, which is usually slate of one shade or another, is the line of reasoning usually applied by breeders. To be a little more explicit: Dark slate undercolor was formerly desired very much because it was thought that by breeding for and from specimens that possessed it, the disqualifying white, so prone to appear in males, was most effectively eliminated. The fundamental reason why it is no longer insisted upon lies in the fact that the best penciled specimens are inclined to have light slate in the undercolor and males from the best specimens may have light slate, or even white, at the base of the feathers, yet both would be tolerated for the sake of producing superior female plumage. Another reason is that more brilliant surface color accompanies the lighter shades of undercolor; or, at least, many think so.

The Color of the Pencilings.—Because the ground color of mahogany-brown is marked with broad, black lines or narrow bands, which, when approximately ideal, may have the appearance of having been sketched with a pencil, these markings are known as pencilings.

To be ideal, the color must be black. This quality gives strength to the pencilings, by virtue of the strong contrast, as true black give prominence to the pencilings. Lustrous, greenish-black pencilings sometimes appear and are very pretty, though the Standard does not require penciling of such pronounced black. Brown shades or any shade that gives the penciling a weak, or, as fanciers express it, a "washed out" appear-

ance, are not desired for the reason that there is little contrast between the mahogany ground color and the pencilings.

Irregularities of Pencilings.—Aside from being weak in color, irregularities take many and varied forms. In substance, however, one description, namely, failing to follow the outline of the feather, covers them all. Occasionally, pencilings will vary so from their true course that they will run straight across the feathers as barring does. This is far from what is desired. Other pencilings will break, leaving a space, while others zig-zag around instead of having a clean, straight outline. Again, one edge, usually the outer, will have sharp definition, while the other is inclined to rather gradually run into the ground color. All these faults and others must be bred out by selection of both male and female parents. (See illustration, Plate 98.)

Too Few Pencilings.—The Standard requires each feather in the penciled sections to have three or more distinct pencilings. As a rule, when the pencilings are more than this number, they are not as distinct as if reduced to three or less. The fewer the pencilings, the more prominent they become because they are heavier or coarser. Fineness is usually acquired at the expense of prominence, and on this point some difference of opinion has existed as to which characteristic was the most desirable. The advocates of fine pencilings have proven to be the most numerous as well as the most influential. This much can be said as to the merits of each side in the controversy. Both were trying for an attribute that created beauty. The question was, which type was the most striking? The advocates of more pencilings won because of the particularly pleasing effect of the remarkable regularity of the unique markings in even and richly contrasting colors.

CHAPTER III.

MATING PARTRIDGE PLYMOUTH ROCKS

The widely divergent shades found on the male and female of this variety, to which attention has already been called, together with the complicated and intricate system of markings of the female plumage makes the Partridge Plymouth Rock one of the most difficult varieties in the Standard to breed to an approximate degree of perfection. Therefore, experience and skill in selecting and mating on the part of the breeder are assets of considerable value.

The Partridge variety of any and all breeds furnishes one of the most pronounced examples of the necessity of double-mating, according to the principles of mating as related in Part II, that a special mating for each sex is necessary when the sexes have different color patterns. In neither color nor in markings are the Partridge sexes alike. If one is not familiar with the Partridge markings, it is inconceivable that males with solid colored feathers in breast, shoulders, wing and tail coverts will breed females, the feathers of which sections are of two widely contrasting colors, and furthermore, diverge so widely from a solid colored web as to show three distinct crescentic pencilings. Yet, a knowledge of the difference in color and color patterns of male and female in Partridge varieties was handed down to us with our first information about Asiatic fowls.

Single Matings.—Many of the breeders today practice, or claim to practice, single mating. The requirements of the latest (1915) Standard are much more favorable to this method than were the Standards before. First, because penciled necks are permitted on the females. It has always been difficult to breed penciling in all soft and semi-soft feathers, except those of the neck and exclude it from those. By accepting necks that are slightly penciled, we receive more and better pencilings in all other sections. Second, because the males that are the sons of the best penciled females have also been prone to show brown edging in the soft fluff feathers, which the present standard allows, and very often, also, in the breast, we have a beginning toward the acceptance of the son of the best penciled female as the ideal male. But this son of the female goes further and has more or less brown in the rear-body feathers, and sometimes in breast, and the striping in hackle and saddle is sometimes broken

and weak, failing in continuity and lacking in strength, intensity and lustre. Often, only at the end and then for no greater extent than an inch or less does a real stripe appear. So that if we adhere to the ideals of old, or to present ideals in males, there are still advantages to be gained by the double-mating system, because we can more easily conform to Standard requirements in these sections, that is, we can more easily obtain solid black breasts, and rear body sections, as well as stronger or more metallic striping in male hackles and saddles.

The Popularity of Single Matings.—Some breeders object to double matings because amateurs cannot understand them, and small breeders have no room for them. This causes the novice to look for simpler problems, or, in other words, to take up the breeding of some variety regarded as less difficult. The idea is prevalent that double mating is a disadvantage to any variety. Single mating is then practiced to create or maintain popularity rather than to produce superior specimens. As a commercial expediency, it may be wisdom to develop Partridge Rocks along single mating lines. That will manifestly depend upon the sentiment of the times. This much is granted: that as long as breeders will adhere to the practice of single matings, they will meet in the show room upon even ground, because all their specimens will be produced by single mating. There can be no complaint of unfair advantages. In breeding, much attention must be paid to the penciling and color of the females. Should the development of these female characters produce males that are not of sufficient exhibition merit to be satisfactory to the breeder, it is obvious that females with stronger striping and with less penciling in the hackle must be selected to produce males of greater exhibition merit.

The Ideal Mating.—The mating sought at the present time is one that will produce both exhibition males and females of sufficient quality to win. Such a mating usually consists of a male of rich red, though not dark enough nor deep enough in shade to obscure the black stripe in neck and saddle; as even in the red shade of neck, shoulders, back and saddle as possible; with some red in fluff feathers, and possibly a little in body and lower breast feathers may be tolerated in many matings and even sought in a few. Such a male is now considered fairly good exhibition color, notwithstanding minor discrepancies when compared with the Standard description. It will be noticed that the fluff or soft feathers back of and between the thighs may be

"tinged with red." Generally, the red extends beyond these limits and is found in the body feathers. This is tolerated by most judges, though not permitted in the words of the Standard as interpreted literally, because penciling is both desired and required in this section of the female plumage and it is conceded that females with pencilings which extend well to the rear of the body produce males with red in this section. In a general way, it may be stated that the sires and brothers of the most perfectly and consistently penciled females show considerable red in those sections that correspond to the penciled sections of the females, breast and wing coverts possibly excepted; though the better the pencilings of these female sections, the more apt are the corresponding sections on the sires and brothers to show red or brown. (See illustration, Plate 99.)

The female desired to mate to such a male is the one that conforms most closely to the Standard of Perfection in color and markings, and shape also, of course, but this feature is treated under that head, and one treatise does for all varieties of Plymouth Rocks.

The Standard Partridge Plymouth Rock female should present a rich, glossy appearance. In color she should be neither too light nor too dark.

The penciling in each penciled section should follow the general profile of the feathers and consist of three or more distinct pencilings; each feather free from shafting; and the feathers in each penciled section to be a rich mahogany-brown, penciled with black.

The head should be a mahogany brown; the neck feathers bright red, closely matching the shade of color desired on the neck of the male; wing bows, back, breast, tail coverts, body, fluff and thighs a rich, mahogany-brown, penciled with black; the wing primaries black, with an edging of mahogany-brown on the outer web; the inner web of the secondaries, black; the outer web, mahogany-brown penciled with black.

The main tail feathers black, except that the two top feathers should be mahogany-brown on upper edge. (See illustration, Plate 100.)

Beak, eyes, comb, face, wattles, ear-lobes, shanks and toes should be the same color as that required for the male.

Different interpretations will, naturally, be placed upon such color terms as reddish-bay and mahogany-brown, but on the whole, breeders, exhibitors and judges agree very well as to the correct and incorrect shades. Lighter shades of mahogany-brown are, of course, preferred if the male is inclined to be too dark, and darker and richer shades if the male of the mating is rather too light or bright. Females that have the required number of distinct pencilings which conform closely to the outline of the feather and which are carried out in detail in all sections, particularly in body and thighs in which the penciling is usually the weakest, are as highly prized for breeding as for exhibition purposes, and even more so, though they may be one or two shades removed from the shade of mahogany-brown most accepted as ideal, and will be selected for the best matings.

The conclusion will be rightly drawn that such matings will produce splendid females, but there must exist a tendency toward weak hackle and saddle striping which may become so much in evidence that the high quality of the males is very seriously impaired.

In that case, and if one is determined to breed males of the highest exhibition merit, special matings for that purpose must be employed. (See illustration, Plate 101.)

Of the male for this mating little or nothing need be added to the description in the Standard of Perfection and the explanations already offered herein. It is merely necessary to repeat the old rule so often repeated, to use the best male available; that is, the one that most nearly conforms to the Standard requirements, other qualities, particular lines of breeding and length of the breeding lines being on par. This means one with a strongly striped saddle as well as hackle and solid, lustrous black breast, body and wing-bar. (See illustration, Pate 103.)

The females selected would, of course, as far as the color is considered, be those which had particularly rich, red color and strength of black striping in the neck. In making selections for richness of color, do not overlook the short, small feathers under the throat. A rich color or medium to rather rich shade is very desirable for females that are to be used for breeding exhibition males exclusively. (See illustration, Plate 102.)

A Word of Caution.—"Two dangers must be avoided if we wish to succeed, either in perfecting or improving fancy fowls.

PARTRIDGE PLYMOUTH ROCKS, FULL SET OF FEATHERS FROM A MALE, AS MATED TO PRODUCE EXHIBITION FEMALES

Upper row: Head, breast, body, thigh (near hock).

Lower row: Wing primary and secondary, neck, wing-bow, wing-bar, back, saddle, tail-covert, tail proper.

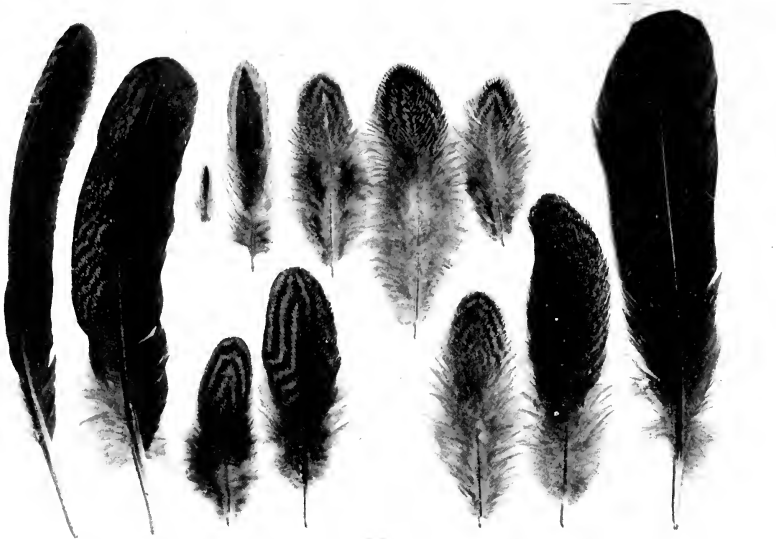
PARTRIDGE PLYMOUTH ROCKS, FULL SET OF FEATHERS FROM A FEMALE AS MATED TO PRODUCE EXHIBITION FEMALES

Upper row: Head, neck, breast, body, thigh (near hock).

Lower row: Wing primary and secondary, wing-bow, wing-bar, cushion, tail-covert, tail proper.

PARTRIDGE PLYMOUTH ROCKS, FULL SET OF FEATHERS FROM A MALE AS MATED TO PRODUCE EXHIBITION MALES

Upper row: Head, neck, breast, body, thigh (near hock).
Lower row: Wing primary and secondary, wing-bow, wing-bar, saddle, tail-covert, main-tail.



PARTRIDGE PLYMOUTH ROCKS, FULL SET OF FEATHERS FROM A FEMALE AS MATED TO PRODUCE EXHIBITION MALES

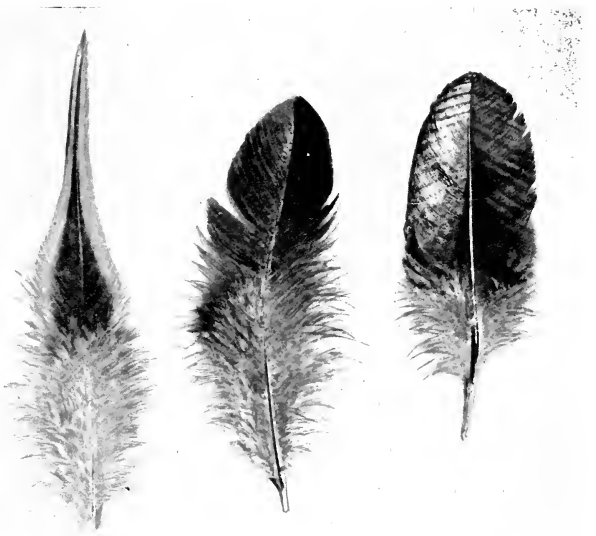
Upper row: Head, neck, breast, body, thigh (near hock).
Lower row: Wing primary and secondary, wing-bow, wing-bar, cushion, tail-covert, tail proper.

One is mating those with the same defect, and the other is going outside of a strain for 'new blood.' One is equally as disastrous as the other. This idea of getting stock of absolutely no relation to the fowls with which they are to be mated has ruined more good flocks than we at first imagine. It is almost a custom, and the idea that it is necessary is prevalent, even among fanciers, while the very opposite is the case. Seldom, although practiced with the very oldest breeds, will matings of entirely different strains of a breed produce much better than culls, and their progeny is very inferior foundation stock. Careful observation and experience with nearly half the varieties of pure-bred poultry convince me that there are as few exceptions to this as other rules." (S. A. Noftzger.)

The greater the difficulties presented by a variety in breeding, the greater the care should be to practice the above principles of breeding.

As to Both Sexes.—"There is no question but that some fanciers select their fowls of this breed too dark, both male and female, while in other sections of the country the color of both sexes is without doubt too light. There is a rich, bright, medium color for the male and an exquisite, glossy mahogany for the female that should be universally adopted, and when all become better posted in this respect, the high color of the 'Beauty Breed' will be more appreciated." (S. A. Noftzger.)

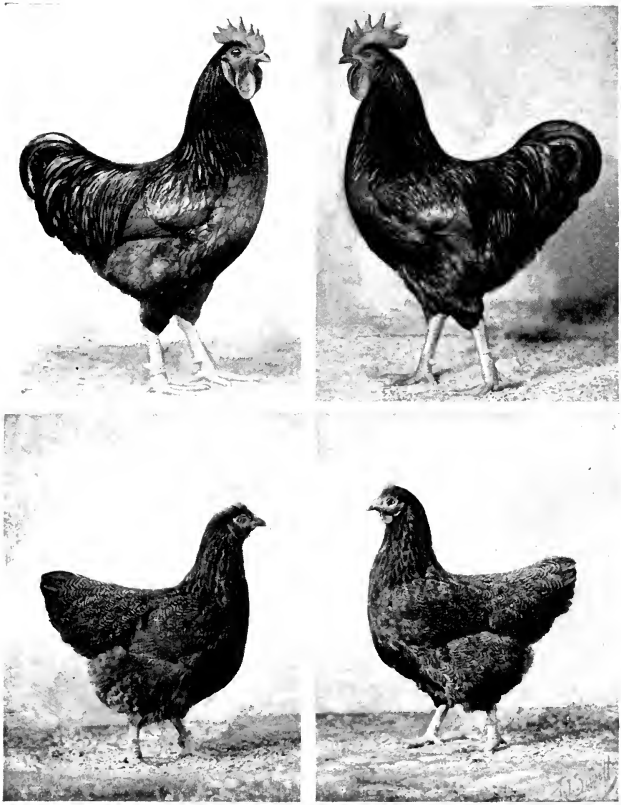
PLATE 103



FEATHERS FROM PARTRIDGE PLYMOUTH ROCK MALE, USED IN BREEDING EXHIBITION MALES

1. Saddle feathers. Solid black stripe.
2. Breast. Solid lustrous black.
3. Wing-bar. Solid, lustrous greenish black.

PLATE 104



TYPES OF MODERN PARTRIDGE PLYMOUTH ROCKS

Upper right hand, a Garden winner.
Other models furnished by State Agricultural College of Minnesota.

SECTION VII.

CHAPTER I.

COLUMBIAN PLYMOUTH ROCKS

ORIGIN AND EARLY DEVELOPMENT

THIS and the Partridge Plymouth Rocks are the latest among the Plymouth Rock varieties to receive Standard recognition. By accepting the variety prefix "Columbian," which up to that time applied only to the variety of Wyandottes which carries the same color scheme as the Light Brahma, a term was established that is now universally understood to be applicable to all varieties of all breeds which, now or will hereafter, bear the color scheme of that old and much admired Asiatic variety. The term Columbian had already been applied to a variety of Wyandottes which made their first appearance in 1893, the year of the World's Fair at Chicago, known as the Columbian Exposition, was in progress and from that fact the term was, seemingly, appropriately applied to this, then a new variety.

The Incentive.—The incentive back of the endeavor to effect a creation of this kind in life is apparent to all who understand poultry problems. It was but another attempt to transfer beautiful plumage to a type that had already proven most useful. On the one hand we have a color design best exemplified by the Light Brahma fowl, the plumage of which is a wonderfully effective and striking combination of black and white. All concede its wonderful beauty which had held from the time of its introduction, the admiration of poultry fanciers, breeders and the public generally, yet it is a fowl which is adaptable to special purposes under special conditions. It is the largest and most magnificent of our recognized varieties, but it is known that the larger the fowl, the longer the time required for maturity, all conditions being the same. The variety did not, therefore, meet the demands of some of its admirers in that it was not a variety that was included, commonly, among the general-purpose breeds. A general purpose fowl with the same color scheme was but the

natural desire of those who admired the plumage of the Light Brahma. On the other hand, then, Plymouth Rocks had proved their worth and popularity as such, and those who desired a general purpose fowl with Light Brahma plumage, naturally thought of a Plymouth Rock-Light Brahma combination or amalgamation. This idea can hardly be called purely original, inasmuch as this identical task had been before successfully accomplished by breeders of Columbian Wyandottes, and this accomplishment may have convinced Plymouth Rock admirers that the same color scheme could be transferred to their chosen favorite. We have noticed, heretofore, that the later Plymouth Rock varieties did not originate as early as the corresponding varieties of Wyandottes, as well as the fact that there are not as many of them. This does not, necessarily, indicate a lack of interest or initiative on the part of Plymouth Rock breeders; it may, on the contrary indicate the state of very general satisfaction with varieties already existing.

The Foundation.—Seemingly, the most direct way to combine Light Brahma beauty and Plymouth Rock usefulness was to cross the Light Brahma and White Plymouth Rock. All that is desired above and beyond what the White Plymouth Rock already had, was the acquisition of black in certain sections. With this acquisition, some very undesirable features such as the Brahma shape, the comb too, and too heavy body and leg feathering were bound to be transmitted to the offspring of such a cross to a greater or less extent which features could, of course, be eliminated by years of a selective breeding. And this was the process by which the variety was originated and in part established. There was some doubt as to whether the offspring of such crosses could be so mated from generation to generation as to gradually eliminate the undesirable features and at the same time retain those qualities that were so much sought after. The plan was feasible, however, even though perplexing and is the process by which certain strains were originated and in part established.

Advantage was naturally taken of the pre-establishment of Columbian Wyandottes and the fact that we have spasmodically, from this, as from all rose comb varieties, single comb sports and, as if nature wished to assist, some of these were much more like Plymouth Rocks than like Wyandottes. Many of the Columbian Rock breeders were eager to secure these sports, and

their frequent occurrence gave many opportunities to use them in crosses with lines that had been originated in the manner described.

Still another cross was used to establish this variety with more or less success. This was the cross of Barred and White Plymouth Rocks. The results when the cockerel-line of Barred Rocks was used are said to have been unsatisfactory, but good results did come from the pullet-line cockerels mated with White Plymouth Rock females.

The Influence of the Columbian Wyandotte.—Seldom is it that credit for the creation of a breed or variety can be given to one individual. Usually, one new creation in the poultry world suggests another similar in many respects, but unlike in some, to the first.

This Columbian Plymouth Rock variety probably furnishes as striking an instance of this as is found among the Standard varieties, but it is but one of many, and in no way differs from the many. Columbian Wyandottes were exhibited nine years before the first cross to perpetuate these Plymouth Rock cousins was made. No doubt the Columbian Wyandotte had suggested the possibility of a Plymouth Rock of the same color pattern, long before the suggestion was acted upon by the originators of Columbian Plymouth Rocks. Many of us may be wondering how Columbian Leghorns or Columbian Dorkings or scores of other varieties would look, but we do not act upon this suggestion until we are confident that such a variety will be worth while. To be worth while, a new variety must be better in one or more respects than those that are already established, or handsomer. It must be admitted that most of our new varieties have been an outcome of a conviction in the minds of one or more persons, that the beauty of one breed can be combined with the usefulness of another. By the creation of the Columbian Wyandotte, a fowl, much smaller but yet of medium size, of good laying qualities, with smooth legs and with the same color pattern as the Light Brahma, was established, but an important fact, the one which must have crystallized the suggestion of a new variety of a different breed along these lines into an actuality, was that the Columbian Wyandotte had proved during this trial decade that it was worth while.

Who Was the Originator?—On this point Mr. D. M. Green, one of the early breeders of this variety, for several years secretary of the Columbian Plymouth Rock Club, since connected

with the United States Bureau of Animal Industry, who has access to most of the manuscript on Columbian Plymouth Rocks, writes:

"To no one individual is due all the credit, as it is a conceded fact that several fanciers, and not any one particular breeder, took part in the origin and early development of the variety. However, to Mr. F. M. Clemans, Mechanicsburg, Ohio, and Mr. George H. Sweet, East Aurora, New York, is due the honor of taking the first steps with this object in view, Mr. Clemans making the first cross in 1902 and Mr. Sweet about two years later. These two earnest fanciers were the pioneers, although several other breeders did as much or even more perhaps in perfecting and introducing the variety to the public.

The Mr. F. M. Clemans of Mechanicsburg, Ohio, mentioned in the above, is said to have been the first to create this variety and the first to advertise them. Another of the early breeders claims that the honor of originating the Columbian Plymouth Rocks belongs to several who actually originated this variety by crosses of their own selection. These selections have been previously named in this article.

THE EARLY STRAINS

Light Plymouth Rocks.—Mr. Clemans, however, positively asserts that he was the first to make the crosses that proved to be the foundation of this variety; and these crosses antedate any others that were made with the same object in view, and, in justice to him, it must be said that no one seems to claim a definite date prior to that of Mr. Clemans' first cross. You will note that Mr. Clemans did not call them by their present name, but combined the names of the original parents as well as the blood. We quote from an article of Mr. Clemans' as follows:

"As the date of my original crosses takes precedence of all others, I can fairly claim to be the originator of Columbian Plymouth Rocks. This honor is practically accorded to me by the latest authoritative work on The Plymouth Rocks, published in 1911. It is true that other breeders by independent crosses later formed other strains (and I have no desire to detract from them), but my crosses of 1902 antedate all others. Mr. Sweet, practically the only rival for the honor, did not begin his work until 1905. I was also the first to introduce the breed. This was

in 1907, when I 'brought out' the breed through the columns of the American Poultry Journal, naming them 'Light Plymouth Rocks' in honor of their Light Brahma Plymouth Rock origin. My early crosses were made with the best obtainable blood of the Light Brahma, Barred Plymouth Rocks, White Plymouth Rocks and good boned Columbian Wyandottes. I also used at that time a male bird of unknown origin, but almost ideal markings which I was so fortunate as to find in the flock of a friend. The years of breeding have since obliterated undesirable markings of the original blood used, and I have been signally successful in holding to the true Plymouth Rock type. This has been the aim in my breeding—to secure real Rock type and combine it with the beautiful and much desired color of the Light Brahma."

Type Important in Early Columbians.—How great importance Mr. Clemans attached to true Plymouth Rock type—that is, the large-boned sort, in distinction to fine-boned birds obviously of Wyandotte origin, is well brought out by the following extract taken from a report of the Philadelphia (1911) show:

"The 'Columbian' Plymouth Rocks shown by the originator show the results he has attained in establishing his Big-Boned Rock type of Columbian Rocks. His first and third cocks, each weighing 10½ pounds, were regular models in Rock type, also showing grand color. His cockerel weighed 9 pounds, was also a rare beauty and a most desirable bird. His pen, with cock weighing 11 pounds and hens from 7½ to 8½ pounds each, was a rare collection of the best of quality; in fact, we were much pleased to see this size with excellent color and very choice shape."

The following discussion of type should be accredited to Mr. Clemans: "The value of Rock type cannot be too strongly emphasized. It is even more important than color. The beginner must avoid being led into the purchase of the modern Wyandotte 'sports.' The popularity of Columbian Rocks has brought upon the market these little imitations of the breed. Some of them are bred by unscrupulous breeders who wish to get money out of the demand for the breed and then drop out. Others are being bred and sold by amateurs who know no better. The breeding of such stock can only end in disappointment.

"It is true that there is some Wyandotte blood in all good strains, but it was combined with the Brahma and Rock blood and produced quite a different fowl from the modern 'sport.' The true Rock type of the breed is 'a thing of beauty.' Its popularity is perfectly assured. The demand for good specimens will be on a rising scale for years to come. Already I have sold exceptionally fine male birds as high as $100.00. While this is a phenomenal price for a new breed it will be greatly exceeded for choice specimens in the future, just as it has been in the older breeds."

The above is printed to indicate the conditions at the time. These statements show clearly and convincingly that there was a tendency to use Wyandotte sports, which was perhaps legitimate, if used judiciously and not over practiced because type must then be destroyed. That this expediency was practiced to the detriment of the breed as a breed for a time, there can be no doubt. There was, however, the usual reaction against an unwise practice. The advertisements of the leading breeders of the early period just following their admission to Standard clearly bring out the disrepute in which strains that showed the effects of a Wyandotte cross were held. The breeders of Columbian Wyandottes had for a short period reaped a harvest on their single-comb sports that was quite remunerative, perhaps as much so as on the specimens that came true to lineage. The writer once heard a prominent breeder of Columbian Wyandottes declare, upon being asked as to the future of the Columbian Plymouth Rocks, that the only purpose of that variety was to absorb the single-comb Wyandotte sports at a price. That profitable period, as pointed out, was passed when Columbian Plymouth Rocks became as well established as their older rivals.

The Royal Strain.—The Mr. Green referred to in a preceding paragraph was one of the very first breeders and gives the following account of how his strain, afterwards called the "Royal," was built up from the original cross of Light Brahma and Plymouth Rocks. It is the plan for a foundation to which reference was made in Mr. Green's own language, written into this copy as "feasible, even if perplexing"; namely, of adhering to the straight cross of Light Brahma and White Plymouth Rock, as the following account clearly relates:

"The first crosses and the results obtained were as follows: Light Brahma males with strong markings were mated to extra large White Plymouth Rock females with small, well-defined combs, bright, clean yellow legs and true Rock type. The result was large, vigorous, sturdy youngsters with no particular fixed type or color markings to any certain degree, yet Rock type predominated and the Brahma color in many specimens showed clearly that it was firmly seated. There was a variety of combs and feathered shanks were a prominent defect, but some few male birds were exceptional specimens showing the latter fault in only a moderate degree and with color nearly equal to their sires. These males were mated in two ways, back to their dame, which were designated as Flock A, and to the best pullets selected from the original cross, which were designated as Flock B. Flock A produced birds especially good in type, good comb and fairly clean shanks, but weak in color of hackle, wing and tail. The offspring from Flock B averaged good in color, showing exceptionally strong hackles and tails, but with poor combs, type and more leg feathers. The next mating consisted of the more desirable specimens reared from Flocks A and B; also pullets from Flock A back to the best male from the original cross. The specimens from these matings showed a decided improvement, some individuals having clean legs with good type and color and quite even, well balanced combs. At this point the best specimens were still far from what was desired, yet it was evident that the new variety had been created."

We have, then, clear and authentic accounts of the different sources of the foundation stock of this variety. They are, as nearly as we can determine, principally Light Brahmas and White Plymouth Rocks, with a strong influence of single-combed Columbian Wyandotte Sports and a somewhat less influence of Barred Plymouth Rock blood. Besides these established lines of blood we have the unknown male of Mr. Clemans' that in some unaccountable way betook to himself very much the appearance of the, as yet, unestablished ideal.

After the variety reached a stage where a general interchange of birds occurs between breeders of the different strains, it became impossible to trace blood lines. Accounts must then relate the progress of the breeds as to quality, popularity, etc.

CHAPTER II.

COLUMBIAN PLYMOUTH ROCK PLUMAGE

STANDARD DESCRIPTION

Disqualifications

One or more solid black or brown feathers on surface of back of females; positive black spots prevalent in web of feathers of back except slight dark or black stripes in saddle near tail of male or in cape of either sex; red feathers in plumage; shanks other than yellow. (See general and Plymouth Rock disqualifications.)

COLOR OF MALE

Head.—Plumage, white.

Beak.—Yellow, with dark stripe down upper mandible.

Eyes.—Reddish-bay.

Comb, Face, Wattles and Ear-Lobes.—Bright red.

Neck.—Hackle, web of feather solid, lustrous greenish-black with a narrow edging of white, uniform in width, extending around point of feather; greater portion of shaft, black; plumage in front of hackle, white.

Wings.—Bows, white except fronts, which may be partly black; coverts, white; primaries, black, with white edging on lower edge of lower webs; secondaries, lower portion of lower webs, white, sufficient to secure a white wing-bay, the white extending around ends of feathers and lacing upper portion of upper webs, this color growing wider in the shorter secondaries, sufficient to show white on surface when wing is folded; remainder of each secondary, black.

Back.—Surface color, white; cape, black and white; saddle, white, except feathers covering root and sides of tail, which should be white with a narrow V-shaped black stripe at end of each feather tapering to a point near its lower extremity.

Tail.—Black; the curling feathers underneath, black laced with white; sickles and coverts, lustrous greenish-black; smaller coverts, lustrous greenish-black edged with white.

Breast.—Surface, white; undercolor bluish-white, at juncture with body, bluish-slate.

Body and Fluff.—Body, white, except under wings, where it may be bluish-white; fluff, white.

Legs and Toes.—Thighs, white; shanks and toes, yellow.

Undercolor of All Sections Except Breast.—Bluish-slate.

COLOR OF FEMALE

Head.—Plumage, white.

Beak.—Yellow, with dark stripe down upper mandible.

Eyes.—Reddish-bay.

Comb, Face, Wattles and Ear-Lobes.—Bright red.

Neck.—Feathers beginning at juncture of head, web, a broad, solid lustrous greenish-black, with a narrow lacing of white extending around the outer edge of each feather; greater portion of shaft, black; feathers in front of neck, white.

Wings.—Bows, white; coverts, white; primaries, black, with white edging on lower edge of lower webs; secondaries, lower portion of lower webs, white, sufficient to secure a white wing-bay, the white extending around the ends and lacing upper portion of upper webs, this color growing wider in the shorter secondaries, sufficient to show white on surface when wing is folded; remainder of each secondary, black.

Back.—White; cape, black and white.

Tail.—Black, except the two top feathers which are laced with white; coverts, black with a narrow lacing of white.

Breast.—Surface, white; undercolor bluish-white, at juncture of body, bluish-slate.

Body and Fluff.—Body, white, except under wings where it may be bluish-white; fluff, white.

Legs and Toes.—Thighs, white; shanks and toes, yellow.

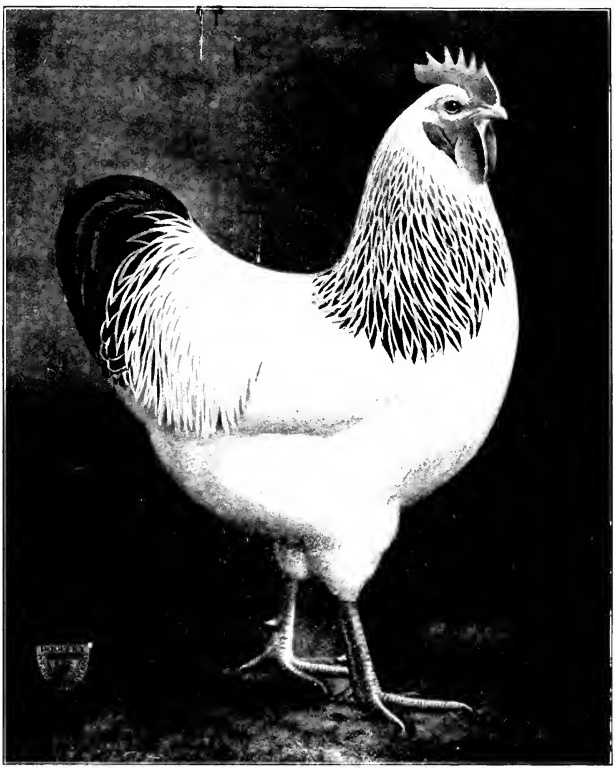
Undercolor of All Sections Except Breast.—Bluish-slate.

COLOR OF COLUMBIAN PLYMOUTH ROCKS

A chapter under this heading will, as a matter of course, be expected to discuss defects of both color and markings when dealing with parti-colored varieties.

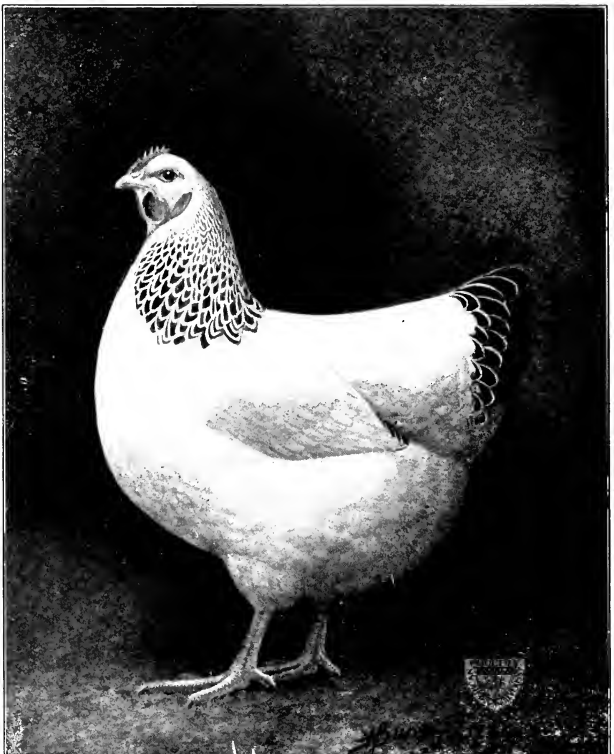
The Color.—Both male and female of this variety have but two colors, white mainly, with markings of black in certain sections. In all sections where white is required, a surface of clear, pure white is desired and required. The black should be a positive black in all sections where required. The black striping of the neck, tail-coverts and sickles should have that beau-

PLATE 105



COLUMBIAN PLYMOUTH ROCK MALE

PLATE 106



COLUMBIAN PLYMOUTH ROCK FEMALE

tiful green gloss which sets off the white section to so much advantage. The black of the flights, secondaries and main tail feathers has no greenish sheen as a rule, which is, moreover, not required. Strong, positive black is necessary to give quality to the specimen and it must be borne in mind at all times that strength of color is always required. Black sometimes fades or rusts; that is, instead of being positive in character, it loses the intensity necessary to be so classified in the list of colors. That color which the Standard would call black, or positive black, is sometimes described as coal black. The shade of black thus described is the shade usually referred to in the Standard, when it does not specifically mention a lustrous, greenish-black. Sometimes, black will take on a luster of bronze and sometimes of purple, neither of which is desirable.

The black found in the plumage of the Columbian varieties has not so often the character of defects enumerated above as a general weakness because of an admixture of white. Often, feathers that should be black are only partially black; often, the portion of a feather that should be black is broken with a bar or a splash of white or gray, while again, an admixture of a certain amount of white makes a dark gray or slate colored feather or part of a feather, rather than a black.

The white portion of the plumage on the surface is supposed to be a pure white; though, perhaps, a clear white expresses the idea better. Owing to the difficulty of obtaining the amount and intensity of black desired in neck, primaries, secondaries, tail-coverts, etc., white undercolor, even in the sections that are described as white on the surface, is not desirable. On the contrary, because of the difficulty of maintaining the intensity of the black in those sections in which black is required, and also, in order that black may be distributed in the right proportion in these sections, slate of a stronger or lighter shade is required in the undercolor of all the sections, even in those which are pure white on the surface. In all sections except breast, the shade of slate required is of sufficient intensity to be described as bluish-slate, while that of the breast is bluish-white, a lighter shade of slate. That is natural because the breast, when both sexes are considered, is collectively the purest white section of the bird, and farthest removed from the tail, the section that should contain the most black. By this means alone can the lustrous

greenish-black striping of the hackle, neck, sickles and tail-coverts of both sexes be produced and maintained from generation to generation.

An understanding of the color faults and excellencies of each of the principal sections is necessary in order that the breeder may mate his birds in a manner that will produce satisfactory results. Therefore, a discussion of these features will be entered into in some detail.

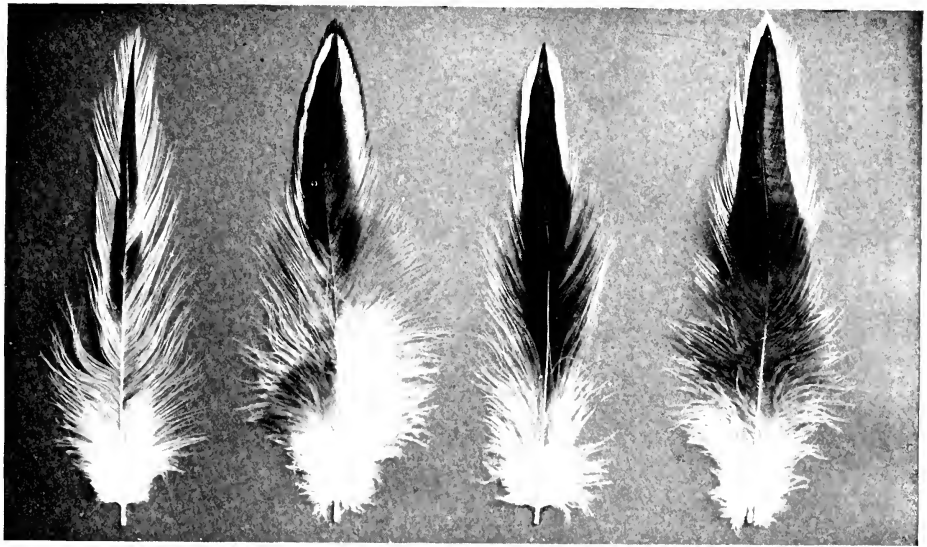
Neck of Males.—Because of its beauty when approaching the ideal in color and markings, and the difficulty encountered in breeding the neck feathers to such an approximation of the ideal that they can be called beautiful, this section when it possesses quality enough to deserve it, is very much appreciated and is, therefore, very important.

The Black Stripe.—The Standard calls for feathers of "solid, lustrous, greenish-black, with a narrow edging of white, uniform in width, extending around the point of the feather"; in other words, this calls, as former Standards have stated it, for a "solid, lustrous greenish-black stripe down the center of the feather and with a narrow, white border extending around the point of the feather."

From this description it would be easy to infer that the black must not be dull and lifeless, neither must it have a brown shading; it must not be broken, at least near the surface, because if any of these attributes are present, the description of the Standard, i. e., solid, lustrous, greenish-black, is not complied with.

The Border.—As to the border, this should be white above all things. Straw color or brassy shades are not tolerated and, if present, should be cut so severely that the class in which a specimen with this fault can win must be a very inferior one, indeed. Besides, the border must be narrow. Narrow is, of course, used comparatively. It refers to the border according to the Standard description, and as the remainder of the feather is black, the black stripe in the center must be relatively broad. Such are the ideals of the present time; a broad, black stripe edged with a narrow white border.

The white border should extend around the point from both sides of the feather. This results in a feather with a white border around a V-shape point of black, **near** the lower extremity of this feather, but not **at** the extremity. This is one of the difficult features to establish, because there is a strong tendency for the black to run through the border to the point of the



COLUMBIAN PLYMOUTH ROCKS, MALE, HACKLE FEATHERS OF DIFFERENT INDIVIDUALS

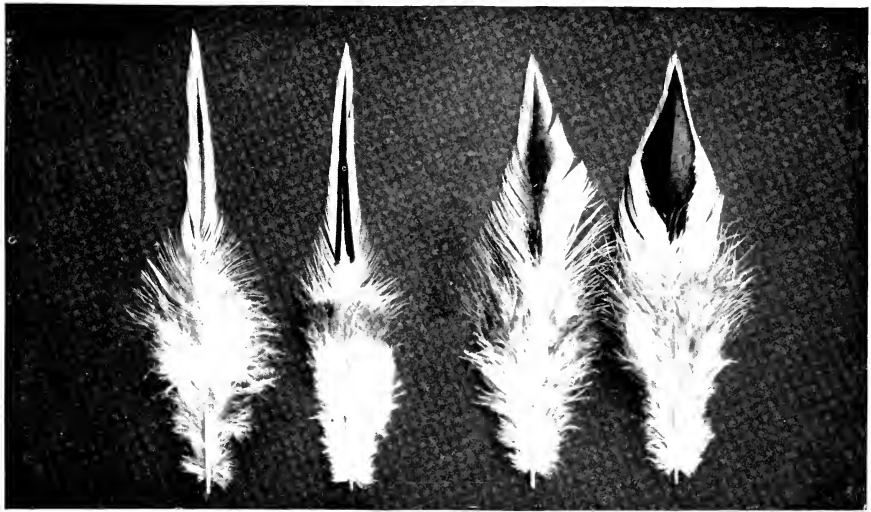
1. Weak stripe (defective). 2. Black running into border. 3. Fine, except black runs out to tip. 4. Ideal (except undercolor light next to root).

feather; first, just on the shaft, perhaps. Then, with this tendency, is one to extend along the very outer edges of the feather. Thus, we have a black tip and a narrow black edge outside the white border. Such a defective feather is shown in Plate 107, Figure 2, while Figure 1 shows weak black striping, with a white shaft and a border that is too wide and with it, of course, a black stripe that is too narrow.

The light shafting noticed in this figure is also defective inasmuch as the Standard states, "greater portion of the shaft, black." The third feather in the row is a good natural feather, but even in this, the black extends too low or too near the point. The fourth feather from the left in the row shows very nearly the ideal feather. Feathers in front of neck are white, the same as the breast.

Neck of the Females.—The neck feathers of the female are shorter and comparatively broader than those of the male. The black center is also broader and the white border narrower comparatively. Such a comparison between the male and female neck feathers is found to exist in a great majority of specimens of this variety and such the Standard calls for, as the word "broad" occurs in the Standard description of the neck of the female and this word is not found in the description of necks of the male. Narrow black striping with the V instead of the rounded points are frequently seen in the neck feathers of females and, though not strictly in accordance with the Standard description, are to be much preferred to striping that, though broad, is weak in color. The plumage of this section of the females is very striking because of the broad, metallic black with the very narrow but sound edging of pure white. A perfect resemblance between both the pattern and the color of the neck and tail-coverts of the females is a noteworthy and taking feature when ideals are approached. (See illustration, Plate 117.)

Cape.—The cape, or that portion of the back that falls under the hackle feathers of the male and the neck feathers of the female, is black and white. This portion of the back is not seen when the bird stands in its natural position and on that account it draws less attention than other parts of the plumage. The feathers have, as a rule, a broad black center with white edging. The exact proportion of black to white is not as rigidly prescribed or enforced as in the more prominent sections, but if the edging is narrow, yet clear and sound, the feathers in the cape

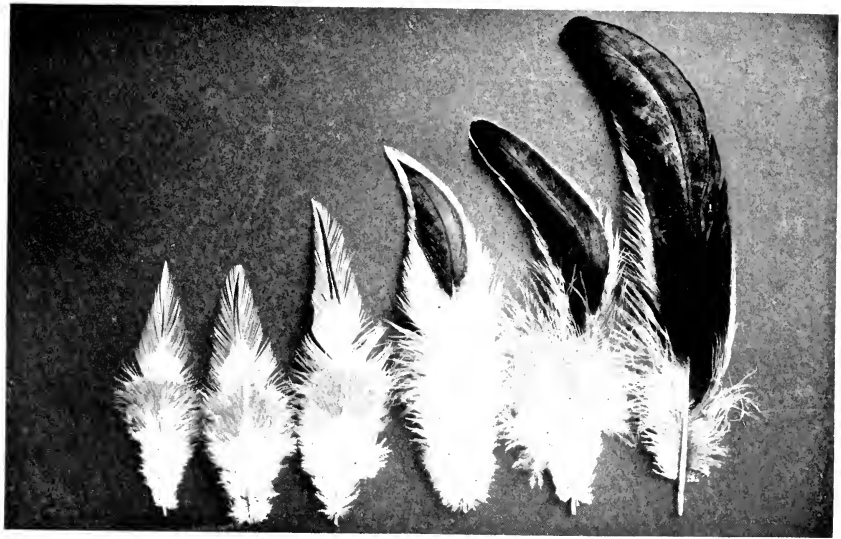


1 2 3 4

COLUMBIAN PLYMOUTH ROCKS, MALE, SADDLE AND TAIL COVERTS

Saddles: 1. Old style single, weak stripe. 2. New style, with V-shaped stripe at end, white middle web and slate undercolor.

Tail coverts: 3. Old style, weak stripe. 4. Lustrous greenish black, edged with white.



1 2 3 4 5 6

COLUMBIAN PLYMOUTH ROCKS

No. 36. MALE. Group of six feathers to illustrate series, from white back and small striping of saddle, next to the back, through saddle, showing larger striping, to and including large stripes of rear saddle, tail coverts and one black (moderate sized lesser sickle or side hanger), and showing proper undercolor in fluffy portion of saddle feathers: 1. White feathers, rear of back next saddle. 2. Small saddle feather next to back, narrow striping. 3. Larger saddle feather, V-shaped striping. 4. Tail covert, dark, strongly-striped, well-laced white edging. 5. Largest covert obtainable, glossy black, nice, clean lacing along edge and around end. 6. Hanger or smaller hanger, moderate size.

correspond more closely to the description of neck and tail-coverts than when not so proportioned.

The Back.—The back proper of both sexes is white on the surface. The importance placed upon this requirement is emphasized by the color disqualifications for this section in both sexes, as two out of the three disqualifications named apply to the back only of male or female. "One or more solid black or brown feathers on surface of the back of females; positive black spots prevalent in web of feathers of back except slight dark or black stripes in saddle near tail of males or in cape of either sex;" these requirements must give the reader a very clear idea of the importance of a clear white surface in this section, that is, the entire back of female from the rear of the cape to the front of the tail-coverts; and the same for males, except for the slight dark striping in lower part of the saddle hanger, "covering the root and sides of the tail."

The clause which requires this particular form of saddle striping in those feathers that cover root and sides of tail is a new one that was first introduced in the 1915 Standard. It was not found in the 1910 Revised Edition. A clause of similar import is found in both the 1898 and 1905 Editions, as follows in the latter, relating to Light Brahmas, the plumage of which is acknowledged to be the plumage after which that of the Columbian is patterened in all details, except leg plumage, which has been, of course, obliterated. "Saddle white, except where saddle hangers take on the character of tail-coverts which, if black in the web and laced with white, shall not be considered defective;" which, though not actually demanding black stripes in the rear and lower saddle feathers, clearly permitted them, and unquestionably for the reason that is advanced for requiring the same now, namely: that better black points, especially the tail-coverts, may be obtained in both sexes, and a more perfect blending of back and tail color is thereby obtained.

That such saddle striping in the males will and does produce the black feather or feathers that are pronouncedly spotted with black or dark color approaching black in the back of the female, most of the best authorities deny; that is, if the character of such black striping is as described in the Standard, "with a narrow V-shaped black stripe at the end of each feather, tapering to a point near its lower extremity." Obviously a "V-shaped black stripe" is not the solid, lustrous, greenish-black stripe of the hackle. This description would signify a pointed

or narrow V-shaped center of white, inside the black stripe at the upper end; and this particular stripe must have the border as the clause, "tapering to a point **near** its lower extremity" would signify, because otherwise, the black stripe would terminate **at** the extremity. Two saddle feathers are shown, Plate 108, the first one weak in striping, and the second an ideal or nearly ideal feather.

It will be observed that this stripe has not the same character as the saddle stripe of the males of other parti-colored varieties and does not, as stated above, correspond in the pattern to the hackle striping of parti-colored males of this or of other varieties. The hackles and saddles of all other varieties of Plymouth Rocks do, however, correspond as to color patterns.

Between the upper termination of the V-shaped stripe and the bluish slate of the undercolor, a white band of greater or less width should intervene. This is desired because it is considered that if the stripe extends to the slate of the undercolor, the male that carries it will throw females with black on the surface of the backs. This is demanded, not only as a point of individual exhibition merit, but as a safeguard in breeding. A better and clearer idea of how the feathers of the back and saddle very gradually acquire the character of the tail feathers is shown by the series of six feathers in Plate 109, 1 from center of back, 2 small saddles, 3 saddle, 4 tail-covert, 5 large tail-covert, 6 smaller sickle. All are ideal or nearly ideal feathers for the positions on the back and tail which they occupied.

The Wings.—The fronts, white except that portion which is covered with breast feathers which may be partly black. The bows, coverts, and outside of the secondaries are white; when spread, both primaries and secondaries should show black. With the exception of a narrow edge of white on lower web, each primary should be solid black. Such flights are hard to produce because a mixture of white with black in one or more of various ways is but natural in a variety that has a predominance of white in its plumage; splashes of white very often occur in the center of the upper or broader web of flight feathers, as shown in Plate 110, feather No. 1, while gray splashes near the end of the feather and white at the base are faults that are frequently seen. The latter two defects are shown in Plate 110, feather No. 2, white feather No. 3 shows the white at base, which is a defect, though it is, on the whole an illustration of a very good feather.

PLATE 110

1 2 3 4

COLUMBIAN PLYMOUTH ROCKS, WING-PRIMARY FEATHERS OF DIFFERENT INDIVIDUALS

1. Old style, too light in color. 2. Dark but gray near end and white at root. 3. Correct, excepting white at root. 4. Idealized.

PLATE 111

1 2 3 4

COLUMBIAN PLYMOUTH ROCKS, WING SECONDARIES

1. Old style, too light.
2. Too much white at tip.
3. Too much white at root.
4. Ideal (natural).

Feather No. 4 shows an idealized flight feather from a male, from which sex are taken all these flight feathers, which show the improvement of a period of fifteen or twenty years, as at that period feather No. 1 was a very good flight feather indeed. The improvement during the period is shown by comparing feathers No. 1 and No. 4.

PLATE 112

1 2 3

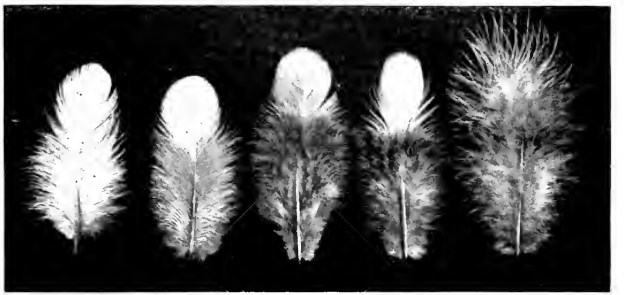
COLUMBIAN PLYMOUTH ROCKS, MALE, SMALLER SICKLES, DEFECTIVE AND CORRECT, FROM DIFFERENT INDIVIDUALS

1. Glossy black, with white at root. 2. White breaking across the center. 3. Idealized.

The upper web of the secondary feathers, that is, the nearer web to the body, is supposed to be black, while the lower or outer web should be white. As the body is approached the proportion of black in the upper web diminishes and the white increases, so that the wing shows only white when folded or, to localize the description still more, the wing-bay is white. Previous Standards have described secondaries in these words: "Secondaries, lower portion of lower web, white, sufficient to secure a white wing-bay, the white extending around the ends of feathers and lacing upper portion of web, this color growing wider in shorter secondaries, the five next to body being white on surface when wing is folded; remainder of each secondary, black." This description, though laborious and encumbered somewhat by phraseology, will, nevertheless, be found to be accurate upon analysis. From it might be deduced the fact that the amount of black in the secondaries is relatively proportionate to the length of the feather, the shorter ones next to the body being white or having a lesser amount of black than those that are larger and more remote. Black, however, whatever the extent, should be black and not a modified shade of that color. Where the secondaries, or primaries for that matter, are black they should be black, and where white is required, white that is nowise modified should be found. Furthermore, between the two, a sharp line of definition should exist. Feather No. 2 in Plate 111, the second feather from the left, shows gray shading in with the white, also too much white at the end of the feather for a secondary near the center of the wing; the third feather from the left, too much white at the base; the fourth is an ideal secondary near the center of the wing. The flights of the males as a usual occurrence are stronger in color, that is, the black is more perfectly distributed than in the flights of the females. Flights splashed with white are, then, much more seriously defective in males than in females and in the young than in the old females.

Tail.—The main tail feathers of both sexes should be black from top to base; often, of course, white creeps in, but comparatively little difficulty is experienced in this particular. The real difficulty lies in another direction, to produce tail-coverts of lustrous greenish-black with narrow lacing or edging of white. Particularly in the females it is difficult to breed the black entirely across these broad coverts and maintain the uniform

PLATE 113

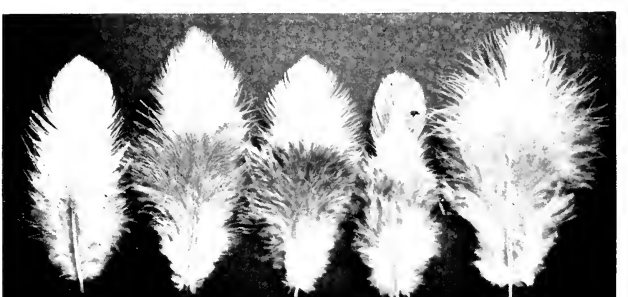


1 2 3 4 5

COLUMBIAN PLYMOUTH ROCKS, UNDERCOLOR OF AN EXHIBITION MALE

1. Center of breast, white without bluish white undercolor.
2. Near center of breast, ideal bluish white undercolor.
3. Breast near wing, with very dark bluish slate undercolor.
4. Middle of black, bluish white undercolor.
5. Body, bluish white undercolor.

PLATE 114



1 2 3 4 5

FEMALE, CORRESPONDING TO SECTIONS IN ABOVE MALE

strength of color and lustre. It is also some task to maintain the very narrow edging so much sought and keep both colors well defined, generation after generation. Very similar in color and pattern, but lacking somewhat in the lustre of black portions are the broad, curly feathers at the rear of and between the main tail feathers.

These smaller sickles are shown on Plate 112; feather No. 1 is defective because of white on base; No. 2, defective because of splashes of white; No. 3, ideal.

Breast, Body and Fluff.—These sections of both sexes should be pure white on the surface, but show the bluish-slate underneath. It is highly desirable that they do so, because with this slate undercolor lacking in all sections of white surface, color points are sure to be weak, losing thereby the chief beauty of the

PLATE 115

COLUMBIAN PLYMOUTH ROCK, MALE, DEFECTS IN SURFACE COLOR

Neck too dark. Hackle feathers black on edge of borders. Breast, next to wing-fronts and wing, near front, with too much black. Black tips on wing-bar. Irregular gray striping in side of saddle. Black showing on fluff and hocks.

variety. Over-dark specimens would be sought more eagerly and prized more highly than over-light or white specimens, both for breeding virtues and exhibition merits; however, there is grave danger in using birds that are too dark.

The Undercolor.—The Standard describes undercolor of both sexes in like phrases, "bluish-slate in all sections except breast which may be bluish-white except at juncture" with body; there bluish-slate is required, thus calling for lighter color than if it used the simple term "slate," which would allow an extremely large range of undercolor from medium slate that might be almost white to very dark slate that approaches black. Too dark undercolor as well as too light is dangerous in the breeding pen, as white-surfaced sections would, in many cases, show black or dark color on the surface of the back of the female and in the sides of breast of the male or in the body feathers of one or both sexes. In the breast of both sexes, a lighter shade of undercolor is required, but at the junction with body the Standard again demands a bluish-slate. A very clear idea of the undercolor of the lower or under sections of the body is presented by the series of feathers in Plates 113 and 114.

The undesirable black that occasionally will crop out in sides of breast, near shoulder or wing, wing-fronts and coverts, and fluff is illustrated in Plate 115.

CHAPTER III.

MATING COLUMBIAN PLYMOUTH ROCKS

For the following we are largely indebted to F. M. Clemans, to whom reference has been made heretofore, as one of the pioneers in the development of this variety:

"The color markings of the Columbian Rock are practically the same as those of the Light Brahma. When we consider how long the breeding of Light Brahmas has been reduced to a science it would be folly to ignore the valuable lessons we can learn from a study of results heretofore obtained by Light Brahma breeders.

"Those who have had most to do with the advancement of the Columbian Rock have not failed to take advantage of this record of achievement in Brahma breeding and our breed has greatly profited thereby. The beginner can profit largely by following the course of the successful Light Brahma man and

advise with him and study the best product of his art at the shows.

"The requirements for color and markings of each section have been so carefully weighed and considered with relation to breeding tendencies, ascertained by years of experience of breeders, not only of Columbian Plymouth Rocks, but Columbian Wyandottes and Light Brahmas as well, by the framers of the present (1915 Revision) Standard for the Columbian varieties, that the desired strength of color may be maintained by using exhibition specimens exculsively in these matings. This happy state of affairs has been brought about largely by requiring stronger undercolor in certain sections, while still demanding a surface of clear white in these sections. Undoubtedly, however, the endeavors of breeders of this variety to more thoroughly establish the strength and stability of the color in the required sections have made a substantial contribution to the advancement we find this variety has made during the past decade.

"In the past so much importance has been attached to a clear white surface and many times to a clear white undercolor, that those sections in which black was required have been weakened, for it is recognized that color is lost in succeeding generations to a certain extent and occasionally a little excess must be added to maintain the balance. While such study of the methods of the pastmasters in breeding Light Brahmas will be a great benefit in mating for color, equally important knowledge can be acquired from old breeders of Barred and White Rocks. Here we learn much of value in producing shape and true Rock characteristics. A Columbian Rock of almost perfect color is of little value if lacking in Rock character, for in Rock type lies more than half of the beauty and utility of the breed.

"In mating this or any breed, consider well the ancestry of the fowls being mated. It is an old saying that 'chicks generally favor the grandsire.' It is important then that individual quality be backed by ancestors selected for years for their individual merit. Otherwise, we must combat the law of reversion to undesirable type.

"Being satisfied as to ancestry, next in importance is the individual type of birds to be mated. The true Rock is a bird of good size that will make Standard weight or better without crowding; in other words, birds that have the bone to carry Standard weight or over without being fattened to an injurious

PLATE 116

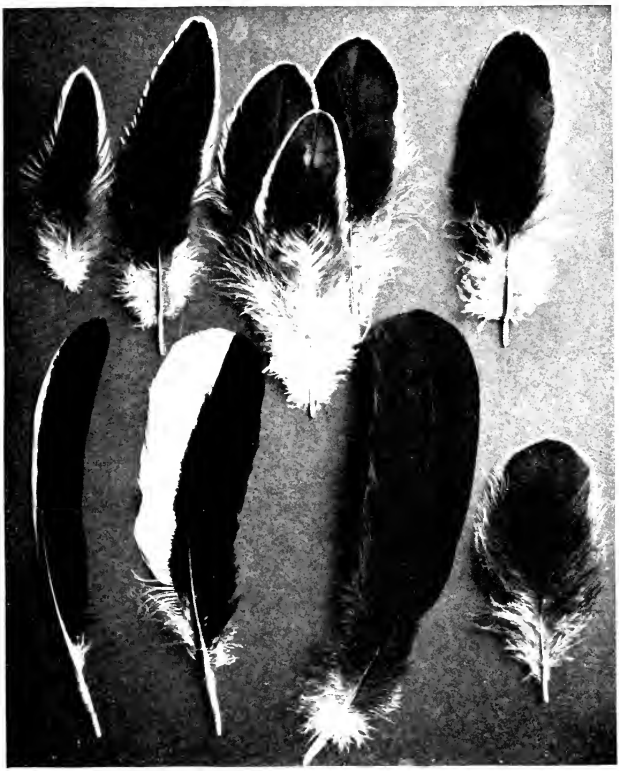
COLUMBIAN PLYMOUTH ROCKS, MALE, FOR IDEAL SINGLE MATINGS

Illustrating the black markings of standard exhibition male for breeding both males and females:

Upper row: Neck, back, saddle, saddle (hanging at side near tail), smaller tail-covert, larger tail-covert, smaller sickle.

Below: Wing, primary; wing, secondary; main tail.

PLATE 117



COLUMBIAN PLYMOUTH ROCKS, FEMALE, FOR IDEAL SINGLE MATING

Illustrating the black markings of Standard exhibition female for breeding both males and females:

Upper row: Neck, top tail-covert, smaller tail-coverts, larger tail-coverts.

Lower row: Wing, primary; wing, secondary; main tail, under-tail-covert.

extent. The shank is a good indicator of weight-carrying capacity. A small light shanked bird in a flock is an indication of the blood of a Wyandotte 'sport.' The true Rock has a broad, deep breast, a long, broad and deep body, with only a slight concave rise of back to the tail. The thighs and shanks are strong and of medium length, avoiding either the low-set Dorking or stilty Langshan.

Color.—"We have learned from Brahma breeders that the tendency of this color is to breed lighter unless kept well reinforced by strong colored males at the head of pens, and that a flock of birds of this color will, if turned loose without intelligent mating, gradually revert to white.

"The breeder of a Columbian variety should bear the following fundamental facts constantly in mind when mating his breeding fowls:

"That while a pullet with a clear white back and white undercolor is a bird to be admired, she should be mated to a male with strong black in neck and wings, well-striped saddle, with cape full of black and white dark slate undercolor, if we would sustain the color of the chicks.

"That the male has much to do with producing and emphasizing color, and, therefore, very light and faded males should invariably be sent to the block.

"That by the use of strong colored males, females that are somewhat weak in color can be profitably utilized."

Mr. Clemans describes several matings utilizing different grades of birds. These descriptions will be of service, especially to the beginners:

The Ideal Mating.—"This mating requires birds of rare show quality. Many, of course, cannot afford such a mating, but the breeder with a good sized flock to select from can often make a number of such matings. For the male, select either a cockerel weighing seven to nine pounds or cock nine to ten pounds, when in good breeding condition, with big, strong, bright yellow shanks, bright reddish-bay eye and in general type as nearly Standard as possible; wing flights, nearly solid black; cape, over one-half black; hackle, flowing full over the shoulders and with broad, deep black stripe; saddle showing some black striping near tail; sickles solid black, with lesser coverts nicely edged with white.

"For females choose either six to eight-pound hens or five to six-pound pullets showing clear yellow, strong-boned shanks, good eyes, flights over half black, stripe in hackle strong and

running well down the feather, laced tail coverts, and undercolor bluish-white. The comb in both sexes should be of excellent type. While such a pen is worth a strong price it will be worth the money for future results.

Females Lacking in Color.—"A male bird as described in the ideal mating, but darker in plumage, the black in cape showing well into the back, and some feathers of back may even show a tendency to black striping. Undercolor, dark slate. Mate to females considerably lighter than in the ideal mating. This is a good mating for results, often producing ideal show birds.

Females of Too Strong a Color.—"To utilize very dark, even smutty necked and ticked backed females. This mating is better adapted to practical purposes, but by its use good results can be obtained where it is necessary to use such birds. To females of this character, mate a male with flights about one-third white; neck and cape rather light, but hackle showing fairly good stripe and clear white edging; back, clear white and undercolor light. While this mating will throw some culls, it will produce a very fair percentage of good birds.

Extremely Light Females.—"This is also a mating that should be chiefly relied upon to produce birds for commercial flocks and utilizes very light colored females which often have light or pearl-colored eyes. Mate these to a male bird that would be discarded as a show bird for too much color in back. He should show very dark hackle, even smoky edge; cape and undercolor so dark as to show in web; wing as near solid black as possible in flights; eye, very strong bright red. Remember, a red eye is a strong breeding eye. It is very desirable in a male bird. Such a cockerel as here described will often moult the second year into a great show bird, though almost disqualified as a cockerel.

"This is an extreme mating, but it makes reasonably valuable females that would otherwise have to be discarded, and very often it will produce a percentage of show birds.

"Matings like numbers three and four and other matings in which the defects of one sex are offset in the opposite sex often meet the wants of a beginner whose purse will not reach a more desirable mating, and from such matings a very good flock is often started. A greater percentage of culls can be expected, but many good birds will also be produced, and from these the

beginner can build up. When the amateur can afford it, however, let him invest in a mating like one or two.

Double Mating.—"Many ask about double matings and how to make them. Columbian Rocks do not require that system and it would be foolish to inaugurate it. However, such matings can be made and occasionally circumstances might make them desirable.

"A special mating for pullets would be one in which the females of the pen conform closely to the Standard in all points, while the male should be equally good except that he should be exceptionally clear of black in web of back and with few striped feathers in saddle, while his tail-coverts should be exceptionally nicely laced. This would throw fine pullets and at the same time a good percentage of good males.

"A mating for show males might be made by mating very dark pullets showing nearly black flights and smoky or ticky backs, and such a mating should produce some grand males, no doubt, but many of the females probably would be ticky in back. On the whole, matings that will produce a good proportion of good chicks of both sexes cannot be too strongly adhered to."

Double matings are now rarely used in solid-colored breed varieties or in those varieties in which the color pattern is the same in both sexes.

As already pointed out, the tendency to use the last three matings diminishes as the variety improves, until nearly every breeder has one, at least, that approaches an ideal mating.

Two groups of feathers, plates 116 and 117, show feathers from different sections of male and female of an ideal single mating, conforming with the best ideal for the best matings of the present day, practically as described in paragraph under heading of "Ideal Matings."

The following article on mating is taken from a recent American Plymouth Rock Club catalogue and was written by T. J. Enslin, Secretary of the club at that time:

"Unlike some breeds, it is not necessary to resort to double matings to obtain best results. Single matings will answer every requirement.

"In selecting breeders the question of type is the first essential from both an exhibition and utility point of view. Also, because the Rock type best exemplifies the beautiful black and

white color markings of our breed, the specimen should be big-boned and have a long body, broad breast and legs, neck and tail to conform.

Hackle

"To my mind there is nothing so beautiful in the makeup of a Columbian Rock as a well-defined, distinctly marked hackle, with feather having broad black centers, edged off with the narrow white stripe. The hackle seems to outshine all parts of the body and naturally should have the most consideration. I do not know of any other section of the body which implies or has so much meaning, consequently every effort should be made to produce good hackles. The black markings should be carried well up to the head, and should meet in front. I have heard many judges say that unless the hackle is at least fairly good they would not go to the trouble to take the bird out of the exhibition coop for closer examination. A smutty or smoky hackle is one of the hardest, if not the hardest, defect to outbreed, but it can be done by line-breeding two or three generations on A-1 hackled specimens. A tendency today is to have the white border of female hackle feathers too wide. The narrow stripe in my judgment is the ideal.

Tail and Saddle of Male

"The main-tail feathers of both male and female should be solid black, also sickle feathers of male. The tail-coverts of both male and female constitute one of the most important, as well as most beautiful sections of the color markings. The male tail-coverts should have the greenish-black center in web, edged off with a narrow white border, giving it the appearance of a highly polished feather. Female tail-coverts should have solid black centers edged off with a narrow white border.

"One of the most important sections of male bird is the saddle. The saddle feathers should be white with a distinct, very narrow V-shaped, black stripe at end of feather, tapering to a point near its lower extremity. Many judges disagree as to the amount of collective feather striping there should be in the saddle. In my opinion about one-half or at most two-thirds of feathers is sufficient.

Wing

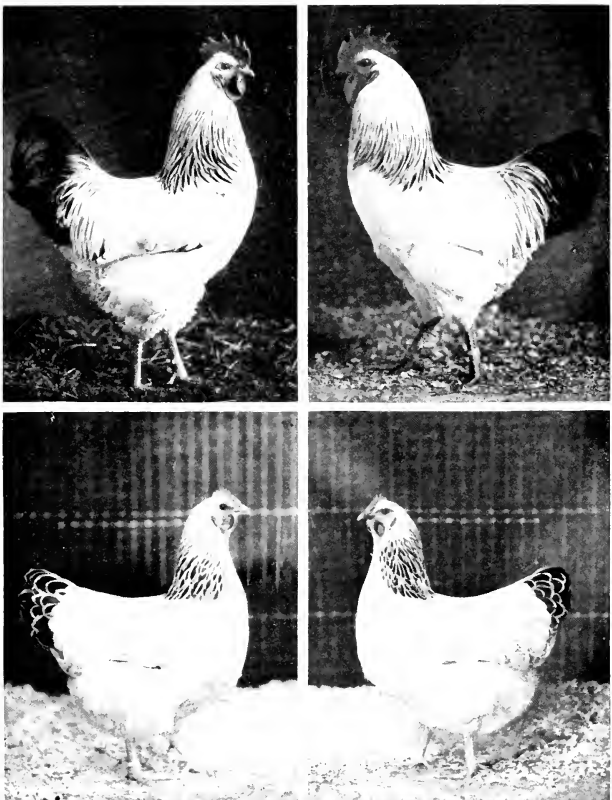
"Primaries should be black, with white edging on lower edge of lower web and secondaries should have much wider white

stripe in lower portion of lower web, producing clean white surface color when wing is folded.

General Color Markings

"The standard Columbian Rock color markings harmonize with each other. It seldom occurs that a bird is light in one section and dark in another. A very dark bird generally runs very dark in all sections including undercolor. My experience has been that it is a serious mistake to mate a very dark male bird to a very light colored female. By very dark males, I refer to birds having slate or black surface color in fluff and a superfluous outcropping of black in surface of breast just below and adjoining front of hackle. Such a mating will produce anything but a uniform lot of birds and due to the well known fact that the male bird has a predominating influence in color of offspring the result will be a very large percentage of smutty or smoky colored birds, which to my mind is the most distasteful as well as discouraging experience a beginner can have. On the other hand birds too light in color, although more pleasing to the eye, also have a number of defects such as poor wing color and undercolor, which today are carefully considered by the judge. The standard calls for "bluish-slate" undercolor for all parts of body except breast, where "bluish-white" is called for. Good undercolor invariably accompanies not only good surface color but good wing color, and when both male and female (as well as generations before them) possess these characteristics, there is little chance of offspring breeding lighter in color. My experience has been it is not necessary that the birds in the breeding pens should have stronger color markings than that which it is desired to produce in the offspring. This idea originated with the old-time Light Brahma breeders, who, although they accomplished wonders, and to whom we are indebted for many good points in Columbian Rocks, paid little attention to saddle striping, and still less to undercolor such as is required by the latest Plymouth Rock Standard Breed Book. These features were carefully considered by the 1915 Revision Committee of the American Poultry Association, which required that stronger undercolor should prevail in certain sections while still demanding a surface of clear white in these sections. I believe in the principle, 'Breed as you exhibit and exhibit as you breed.' Both brassiness and gray in sickle feathers can be overcome by using stronger undercolored birds as breeders."

PLATE 118



TYPES OF MODERN WINNING COLUMBIAN PLYMOUTH ROCKS

BLUE PLYMOUTH ROCKS

Disqualifications.

Shanks other than yellow. (See general and Plymouth Rock disqualifications.)

COLOR OF MALE.

Head.—Plumage, slaty blue.

Beak.—Yellow, shading to horn.

Eyes.—Reddish-bay.

Comb, Face, Wattles and Ear-Lobes.—Bright red.

Neck.—Very dark, lustrous blue.

Wings.—Bows, very dark, lustrous blue; coverts, a clear, even shade of slaty blue, with a well-defined lacing of darker blue; primaries, a clear, even, medium shade of slaty blue; secondaries, inner web, a clear, even shade of slaty blue, outer web, slaty blue; each feather having a clear, well-defined lacing of darker blue.

Back.—Very dark, lustrous blue.

Tail.—Sickles, very dark, lustrous blue; tail-coverts, lustrous blue; main tail feathers, a clear, even slaty blue, each feather having a well-defined lacing of darker blue.

Breast.—A clear, even, medium shade of slaty blue, each feather having a clear and well-defined lacing of a darker blue.

Body and Fluff.—Body, a clear, even, medium shade of slaty blue, each feather having a well-defined lacing of darker blue; fluff, slaty blue.

Legs and Toes.—Thighs, a clear, even shade of slaty blue, each feather having a well-defined lacing of darker blue; shanks and toes, yellow.

Under color of all sections.—Slaty blue.

COLOR OF FEMALE.

Head.—Plumage, slaty blue.

Beak.—Yellow, shading to horn.

Eyes.—Reddish-bay.

Comb, Face, Wattles and Ear-Lobes.—Bright red.

Neck.—Slaty blue, laced with darker blue.

Wings.—Primaries, a clear, even, medium shade of slaty blue; remainder of wing an even shade of slaty blue, darker than that of primaries; feathers in all sections, except primaries, having a clear, well-defined lacing of darker blue.

Back.—Slaty blue, each feather having a clear, well-defined lacing of darker blue.

Tail.—Slaty blue, laced with a darker blue.

Breast.—Slaty blue, each feather having a clear, well-defined lacing of darker blue.

Body and Fluff.—Body, slaty blue, each feather having a clear, well-defined lacing of darker blue; fluff, slaty blue.

Legs and Toes.—Thighs, slaty blue, each feather having a clear, well-defined lacing of darker blue; shanks and toes, yellow.

Under color of all sections.—Slaty blue.

PART FOUR

PLYMOUTH ROCKS FOR AND IN THE SHOW ROOM

SECTION I.—AN EXPLANATION OF THE JUDGE'S PART IN THE SHOW ROOM

Chapter I. THE SCALE OF POINTS.

Chapter II. JUDGING PLYMOUTH ROCKS.

SECTION II.—THE EXHIBITOR'S PART.

Chapter I. THE EXAMINATION OF CANDIDATES FOR SHOW HONORS.

Chapter II. CONDITIONING FOWLS FOR THE SHOW.

Chapter III. SHIPPING TO THE SHOW.

Chapter IV. CARE IN THE SHOW ROOM.

Chapter V. RETURNING FROM THE SHOW.

Chapter VI. CARE OF BIRDS AFTER SHOW.

SECTION I.
EXPLANATION OF THE JUDGE'S PART
CHAPTER I.
STANDARD SCALE OF POINTS

THOROUGHBRED races of horses, cattle, sheep and swine, as well as domesticated breeds of dogs, are measured in value by a fixed scale of points formulated for each breed and, with poultry, applicable to each breed even to every variety.

The American Standard of Perfection describes the ideal specimen in shape and color and this description is the guide for the breeder, exhibitor and judge. It is the supreme law which controls all judges of Standard-bred poultry in making their decisions between contesting specimens in the show room or the breeders' yards.

All breeds of poultry must be bred to the standards formulated by the American Poultry Association and published in the American Standard of Perfection, for without such Standards advancement in the art of breeding poultry would have been impossible.

First Poultry Standard Published in 1865.—The history of standard-making in the poultry world would make a long chapter, for it dates as far back as 1865, when the first "Standard of Excellence" was compiled in England. The late Lewis Wright, one of the most thorough students of the poultry problems, as well as the most successful writer on poultry topics in Great Britain, in his authoritative "Book of Poultry," comments on the first Standard as follows:

"About 1865 a poultry club was formed in England, but it did not secure many adherents and was speedily wrecked by the personal animosity which developed between two or three of its members. But it issued a description of the recognized breeds, with numerical values for the points, under the title of "Standard of Excellence," which was a landmark in the judging of poultry. In spite of many faults, it embodied the principle that fowls

ought to be bred to definite points and judged by them, and that the points could be and ought to be defined. This was a great idea and a great service, though the first club's existence was brief and its Standard very crude. The scale of points only added up to a total of fifteen, through all the breeds, which quite shut out the modern system of "cutting" a portion off for defects; and in the descriptions themselves there were several errors—such as attributing red eyes to Malays—which, however, could scarcely be avoided at that early period. The existing judges ostentatiously declined to be bound by this Standard, which had, in fact, no authority; yet, nevertheless, its definitions or descriptions undoubtedly had great influence in bringing about greater uniformity of type and more general acceptance of a real type in many breeds."

A. M. Halstead, Rye, New York, issued a reprint of this English Standard in 1867, but it did not prove satisfactory to American poultry breeders. A year before the above made its appearance, I. K. Felch, Natick, Massachusetts, devised a Standard and Score Card, with a scale of points, for Light Brahmas, that proved to be the forerunner of an American Standard of Excellence. Mr. Felch claims that his score card was the first to be used in America.

The Lockwood Standard, adopted in New York City in 1871, was the result of the embryonic scale of points on Mr. Felch's first score card, embodying his valuation for shape and color, but the Felch scale was raised to 100 points and, instead of four sections, eleven were allotted to each breed. The bulk of this Lockwood Standard was made up from the English Standard, however. A. M. Halstead, in the fall of 1871, also published an American Standard of Excellence, but neither of these Standards proved satisfactory.

It was not until the American Poultry Association was organized, February 15, 1873, at Buffalo, New York, that the work of compiling a Standard of Excellence which would meet with the approval of American breeders of pure-bred poultry was begun.

At a meeting of the reorganized American Poultry Association held at Buffalo, New York, January 15, 1874, the first American Standard of Excellence was adopted. This standard consisted of 102 pages. At the third annual meeting of the American Poultry Association, held at Buffalo, New York, January 21, 1875, a larger and more complete Standard was adopted, con-

taining descriptions of seventy-nine varieties of fowls, and consisting of 243 pages. Revisions of this Standard of Excellence were made at Chicago, 1876; Buffalo, 1877, and Portland, Maine, 1878. The 1878 edition remained unchanged for many years, as did the Scale of Points. Further revisions of more or less importance were made at Indianapolis, 1888; Buffalo, 1889, and Chicago, 1893, but the most thorough revision of the Standard occurred at Fishers Island, New York, in 1897, when many important changes were made, among them being the separation of the shape and color descriptions to the breed it belonged to. "Typical Carriage" was substituted for "Symmetry" in the Scale of Points. This Standard was adopted at the twenty-second annual meeting of the American Poultry Association, held at Boston, Massachusetts, January, 1898. Additions to this Standard were made at Chicago, 1901; Charleston, South Carolina, and Hagerstown, Maryland, in 1902. But the above revisions, as well as all subsequent ones, did not affect the Scale of Points.

FIRST SCALE OF POINTS

The first Scale of Points printed were those in the Halstead Standard in 1867. They were called "Points in Brahmas," "Cochins," "Dorkings" and other breeds in vogue at that time. As no Plymouth Rocks or Wyandottes were recognized by the Standard at that time, we reproduce below the Scale of Points given for "Light Brahmas":

Points in Brahmas

Size	3
Color	4
Head and Comb	1
Wings, Primaries well tucked under Secondaries	1
Legs and Feathering, ditto	1
Fluff	1
Symmetry	2
Condition	2
	15

For White Leghorns the Halstead Scale of Points ran as follows:

Points in White Leghorns, Single and Rose Combed

Comb	2
Face and Ear-Lobe	3
Purity of Plumage	3
Size	3
Symmetry	2
Condition	2

It is significant to note that breeders of Brahmas fifty years ago placed the paramount value in their Scale of Points on size and color, while the Leghorn fanciers of that time went even further in making color, face and lobes, and size of the greatest valuation in their Scale of Points, symmetry and condition playing minor roles in the scale.

The above early, albeit crude, measures of value given to the various breeds by breeders of a half century ago indicate quite clearly, however, that their idea of valuation of points in the respective breeds was founded on what they deemed the salient features, and it seems to us that the foundation was a good one.

First Scale of Points in the American Class.—In the American Standard of Excellence, as revised by the United Poultry Fanciers of America, convened under the auspices of the American Poultry Association, at their convention held in Buffalo, New York, January 15, 1874, the first standard description of Barred Plymouth Rocks is printed, with the following Scale of Points:

Symmetry	20
Size	20
Color of Plumage	25
Head	5
Comb	10
Tail	5
Leg	5
Condition	10
	100

Size played an important role in the early days of the standard-bred fowl industry, judging by the instructions to judges found in the 1874 Standard, as the following extracts will prove:

"In figuring size or weight, the fowls which shall be comparatively small in proportion to a weight that indicates excessive fat shall be estimated in the same ratio as those which present large size and are deficient in weight compared to size."

"Judges must in all cases make a pro rata reduction for any fractional part of a pound that a specimen falls short of the largest or Standard bird."

In the Asiatic class, the specimen largest in size and weight was deemed the perfect specimen and allowed full number of points in size and weight, provided always that the cocks did not weigh less than eleven pounds, cockerels less than ten pounds, hens less than ten pounds, and pullets less than eight pounds, under the 1874 Scale of Points. As an illustration:

"When the largest cock specimen in size and weight weighs thirteen pounds or more, the remaining specimens shall be figured comparatively, losing two points for every pound they fall short of the weight of the per Standard specimen. When the largest cock weighs under thirteen pounds, and not less than twelve pounds, then the remaining specimens shall lose four points for every pound they fall short of the weight of said best or Standard specimen."

The same rule was applied to Asiatic cockerels, hens and pullets, and all judges in other classes were instructed to first establish a corresponding size and weight that shall apply to their class and shall be in keeping with the spirit of the foregoing:

MODERN SCALE OF POINTS FOR PLYMOUTH ROCKS

(An Adaptation From Mr. Drevenstedt's Article on Wyandottes)

But what Plymouth Rock breeders are interested in today is the valuation placed on their breed by the American Standard of Perfection. In 1888 the Scale of Points for the three varieties of Plymouth Rocks then recognized—Barred, Pea-Comb and White—allotted to the different sections relative valuation as indicated:

Symmetry	8
Weight	6
Condition	6
Head—Shape 3, Color 3	6
Comb	8
Wattles and Ear-Lobes	6
Neck—Shape 4, Color 6	10
Back—Shape 4, Color 4	8
Breast—Shape 5, Color 5	10
Body and Fluff—Shape 5, Color 3	8
Wings—Shape 4, Color 4	8
Tail—Shape 4, Color 4	8
Legs and Toes	8
	100

This scale of points applied to all varieties in the American class. Plymouth Rock breeders of today will note that the valuations given placed too low a value on color of plumage, only 26 points being designated to this important feature. But the Scale of Points in the 1898 Standard was practically the same, with the exception that "Typical Carriage" supplemented "Symmetry." In the Scale of Points of the 1910 Standard we find some important changes. Twenty-eight points are allotted to color of plumage and the shape of the important body sections gains three points. Weight counts less and failure to approach Standard weight is more severely penalzied. By the allotment it will be seen that more credit for merit was accorded to the sections which were in most varieties the most difficult to breed. Plymouth Rocks were now recognized in six different colors and color patterns, or six varieties, three of which were comparatively new. The color patterns of two of these were admittedly difficult to produce, especially at that stage of development.

1910 Scale of Points.

Symmetry	4
Weight	4
Condition	4
Comb	8
Head—Shape 2, Color 2	4
Beak—Shape 2, Color 2	4

Eyes—Shape 2, Color 2	4
Wattles and Ear-Lobes—Shape 2, Color 3	5
Neck—Shape 3, Color 5	8
Wings—Shape 4, Color 5	9
Back—Shape 6, Color 5	11
Tail—Shape 5, Color 5	10
Breast—Shape 6, Color 5	11
Body and Fluff—Shape 5, Color 3	8
Legs and Toes—Shape 3, Color 3	6
	100

INSTRUCTIONS TO JUDGES.

Under the above heading, on page 35 of the American Standard of Perfection, the following paragraph instructs judges, as well as breeders and exhibitors, how to apply the "Scale of Points":

"Merit: The merit of specimens shall be determined by a careful examination of all sections in the "Scale of Points," beginning with symmetry and continuing through the list, deducting from the full value of each section of a perfect bird for such defects as are found in the specimen. Judges must familiarize themselves with the scale of points of each breed they are to pass upon, to intelligently award prizes. And it must be understood that no more and no less value can be placed on any section than is provided for in the "Scale of Points." And it shall be further understood that this system must be applied whether judged by score card or comparison. The minimum cut for any section shall be one-fourth of one point."

On page 41, under "Cutting for Defects," the Standard reads:

"These cuts should not be confused with nor take precedence over the valuation given each section in the Scale of Points of all varieties."

Owing to the fact that all of the largest shows are judged by comparison today, the above paragraph is of greater importance than the succeeding ones, giving cuts to be made in the various sections. In other words, the "Scale of Points" is the true measure of value which the judge must apply when selecting the winners in the Plymouth Rock classes in the showroom or in the breeders' yards. In all sections, except weight and condition, the relative value of shape and color are clearly

defined and, if adhered to, will determine the ratings of the competing specimens correctly as a rule. But the size or weight and condition of an exhibition specimen often decide its standing among the winners in the show-room, and great care must be exercised by the judge when handling birds that appear large and look in the pink of condition.

Size is a relative term, so when two specimens are compared the one that apparently looks the larger will often win, other points being equal. But, applying the weight clause is the safest rule in all such decisions.

It is also well to bear in mind that a Plymouth Rock when over standard weight, though larger in size, may be coarser in type. Size and overweight has a tendency to destroy the type by making the specimen coarser. In defining Standard size, page 39 of the present Standard of Perfection reads:

"In determining size, the judge shall decide by comparing the specimens in competition, with due regard to weight in all breeds and varieties, where weight is required by the Standard. When a bird fails to attain, or in case it exceeds, the size proportionate with the type or shape, it must be discounted quite severely."

Symmetry is valued at four points in the Scale, so a bird approximately closely the Standard ideal can be rated 100 per cent or the full four points of value in the Scale of Points, which will make the ratings of less typical specimens a matter of comparative percentages. But in comparison judging today, as in the past, symmetry is rarely, if ever, computed by a Scale of Points. Where one specimen which is almost identical with another in typical shape or symmetry, has one minor shape defect only, as for instance, a head too narrow, or a comb too large for a Plymouth Rock, that defect should be discounted under head points, as are all minor or serious faults in the different sections, and the cuts to be made when the score card is applied should comply with the rules given in the Standard of Perfection under "Cutting for Defect."

Condition, like symmetry, is valued at four points, and is equally difficult of application when measured by the "Scale of Point" valuation, as no definite rule to determine the relative value of condition in competing specimens can be laid down, for it is a duty of the judge to determine this matter.

The Standard defines Condition as follows: "The state of a fowl as regards health, cleanliness and order of plumage." Frosted combs, broken feathers and scaly legs are discounted

in their respective sections, and handicap seriously the specimen that may be in good health and feather otherwise; rough and soiled plumage, if caused by poor washing and handling, handicaps an otherwise fine specimen severely, but if the plumage of a well-conditioned bird becomes soiled in the show pen, due allowance must be made by the judge.

The relative values of color and shape in the neck, back, wing and breast sections, given in the 1915 Standard, are more just and equitable than those in the older Standards, as color in parti-colored Plymouth Rocks is of paramount importance, especially in Silver Penciled and Partridge, varieties that have run less true to shape requirements than the Barred and White, due to the extreme difficulties experienced by breeders in perfecting the penciled feather pattern demanded by the Standard. To a certain extent, shape had to be sacrified in order to obtain the desired Standard color markings. It is, therefore, necessary to place as high a valuation on these color sections as possible in order to protect the male or female specimens which show superior color markings, but that fail somewhat in the shape of different sections. (J. H. D.)

CHAPTER II.

JUDGING AMERICAN BREEDS — PLYMOUTH ROCKS.

The philosophy of judging Standard breeds of poultry is the same as that which must apply for all other animate or inanimate exhibits found in nature or produced by the art and skill of man, for it is based on the knowledge which governs the valuation of all such matter examined, or specimens exhibited. In other words, the Standard-bred specimen in the yard of the breeder, or in the show pen of the exhibitor, is the matter to be considered by the mind of the judge. And the mind of the poultry judge is governed by the American Standard of Perfection, which is the only safe guide for the breeder, exhibitor and judge in selecting breeding or exhibition specimens. This Standard is the law which every judge must obey.

The fads of breeders and exhibitors must be ignored by the judge, for no conscientious adjudicator of live stock is or ever will be a faddist. Fads of any description are short-lived.

Furthermore, there are the dangers of the advanced types in certain popular breeds or varieties to carefully guard against. They may seem to be in advance of the present Standard for the special variety in some one section of color marking which has been produced by skillful and progressive breeding, and beautiful as such may look to the producer and other admirers of this particular variety, they cannot be justly considered by an American Poultry Association judge until they have been recognized, authorized and printed in the edition of the American Standard of Perfection that is in force at the time of judging.

To recognize any one particular so-called advanced section is to become a slave to a single idea, for the poultry judge with a fad is usually the one who ignores the Standard by placing too much valuation on some particular section in one specimen and overlooking the general all-around excellencies of the competing specimens.

With some judges of Barred Plymouth Rocks, underbarring is a dangerous fad, one that is shared by breeders not infrequently. A Barred Plymouth Rock, beautiful in surface color, will often be passed because the undercolor is not barred strongly and deeply down to the skin, notwithstanding the fact that deficient underbarring and lighter, less sharply defined barring in the undercolor is discounted from one-half point to one and one-half points only.

Exhibitors or judges who cultivate this special fondness for superior development in any one section of a breed or variety will sooner or later realize their mistake; for it is the exhibitor and judge that stick to the Standard, obey its laws and requirements, who will win out in the short or long run always.

The Standard Is the Judge's Guide.—The American Standard of Perfection describes the shape and color sections in each variety of all recognized breeds of poultry, gives the general and specific disqualifications for which exhibition specimens are to be disqualified by the judges, defines under "Instructions to Judges" the most important laws which govern the selection of prize winners, while under "Cutting for Defects" and "In Applying the Comparison System," rules are laid down for the judge's guidance when examining and adjudicating all specimens in whatever classes they may be assigned to.

The foundation of American poultry culture rests upon the American Standard of Perfection and every poultry judge

should bear this in mind. The Standard is supreme law, first, last and all the time. The breeder, exhibitor or judge who fails to recognize it as such destroys whatever chances he may have to make good.

Judging by the Standard.—The American Standard of Perfection being the law, as well as the guide, for the poultry judge, he must be thoroughly posted on its requirements before attempting to adjudicate in any classes at a poultry exhibition. A thorough study of the rules which govern judging is of the greatest importance, as more protests against awards are based on the failure to observe these rules than on errors of judgment. Never overlook a disqualificaiton of any kind, no matter how trivial it may be, or how much the mind rebels against throwing out a surpassingly fine bird. The judge simply has to do it or invite protest. The Standard may seem wrong to him, but that should make no difference, as all the specimens entered in his classes have, or should have, been selected by the exhibitors according to the same Standard. The judge has no right to disregard any of its rules if he desires to remain in good standing in his profession.

Another important point, however, and one that must never be overlooked is: The Standard permits the judge to give the benefit of any doubt he may have in his mind to the bird. A superior specimen, the best in its class, may have some defect so near to the disqualifying limit that an over-zealous judge will exercise arbitrary powers and disqualify the bird. This is placing a radical or literal construction on the laws laid down by the Standard certainly not intended by its framers. A judge must exercise his common sense in interpreting all such laws. To throw out the gem in any class because a pinhead spot of black or red appears in a white feather is both suicidal to the breed or variety and the judge.

Lastly, a judge should follow Davy Crockett's advice—"Be sure you're right, then go ahead"—when judging poultry at exhibitions. Under any circumstances he must make his decisions without fear or favor and care naught for what exhibitors may say. A judge is an individual having but one opinion. That one he should adhere to. Others may have different ones, but that need not influence him in the least. It is, however, his duty toward exhibitors that may be present and who courteously ask him for explanations of his awards to satisfy them. It is well to remember that many exhibitors are as well posted on the merits of the birds entered at the

shows as the judge himself, and some may know even better the strong points of the best birds. Such exhibitors are not kickers, as a rule, and it benefits a judge to associate with them after the show is over.

First Impressions Are Best.—First impressions of any specimen are usually the most reliable, and other things being equal will govern final decisions of the thoroughly competent judge, one who is thoroughly "up" on the breeds or varieties he is called to adjudicate and no other should ever be engaged.

The real judge is one who—plus training and experience—has a natural instinct for discerning the best, which a noted English authority claims is a quality given to but few men and fewer women, adding: "Well do I remember many years ago one such man, though there have been several others, but I mention him because he seldom acted as judge, although one of the best I ever knew. Put before him a dozen birds or animals of any breed, even though he had never seen the like before, and he would assuredly pick the winners, placing them in correct order. He had the instinctive capacity which enabled him to gauge the type and idealize it."

This bears out the adage: "Judges are born—not made," but which does not imply that training and experience are not required, for without these valuable assets, no man should accept the position of judge of important classes at any exhibition of poultry.

It is the experienced eye of the judge that selects, often at first glance, the bird which stands out among all the rest and this one and the others must be measured by the Standard ideal as it exists in the mind of the judge, provided on closer inspection no serious defects are discovered, which would debar them from winning. We call attention to this because some good breeders, who have attempted to pass judgment on poultry in the show room, have failed to look at the good points of the fowl but have started right off hunting for defects. They wanted all that was bad and overlooked all that was good in the birds.

As an illustration, we will cite the case of an old and noted breeder who did not think the judge placed his Buff Leghorn cockerels correctly, contending that the second and third prize birds were better than his first, just because the latter had a tinge of bluish-gray in the undercolor of the back. Yet this cockerel was far superior in surface color and shape to the other two. All the owner could see was one little hidden defect

in color. He forgot all about the other fine qualities of the winning cockerel. He judged not by first impressions, but with a mania for discovering imperfections.

A poultry judge should be an optimist always, see the good and then discount the bad points of a specimen. He must bear in mind that there are twelve sections for shape and nearly as many for color, besides weight and condition, which must figure in the complete and final examination of every specimen. However, in a well finished and matured specimen, typical shape is readily seen at a glance, in fact a real top-notcher stands out from the rest. Other things being equal, such a bird will win.

Yet it may so happen that an ideal bird in type and size is handicapped by a bad comb, which, with the faddist judge, may result in its being passed by without further examination or patient consideration of its superior merits in both shape and color. And therein lies the chief danger in awarding prizes at a poultry show, for this one glaring defect obscures the vision of the judge who happens to be a confirmed defect hunter, at the same time being oblivious to the existence of the Standard which describes the entire bird, even to placing a limit upon penalties for defects.

General Disqualifications. — The American Standard of Perfection, under "General Disqualifications," describes and enumerates the defects which will disqualify the specimens on which they are discovered by the judge. In most instances the descriptions of such disqualifying defects are defined in clear and unmistakable language, but in several others there is considerable room for doubt, requiring intelligent interpretation and generous application by the judge.

For instance, where it reads: "In varieties where positive white in ear-lobes is a disqualification, judges shall disqualify for unmistakable evidence of an attempt to remove the defect." The words "unmistakable evidence" should be carefully weighed before proceeding to disqualify a specimen, as the burden of proof rests with a judge, should an exhibitor demand an explanation in the event of having a specimen disqualified for removal of white from the lobes. To be on the safe side, the specimen should be given the benefit of all reasonable doubt.

But there is another disqualification clause which is even more delicate of adjustment, as it is more difficult of interpretation, and that is: "Faking in any manner shall disqualify

the specimen." This will bring up the perennial query, "What constitutes faking?"

To define "faking" in terms that will prove satisfactory to all good poultry breeders is a difficult matter; as the dividing line between real faking, such as bleaching or coloring of the plumage, trimming of combs, pulling feathers from shanks of clean-legged birds, and the methods of preparing birds for the show room, is a very narrow one, especially when it is considered legitimate to pluck many feathers from a parti-colored specimen in order to bring out the color markings more distinctly and effectively, or to fluff up the feathers of a Cochin, pull tails of a Cochin bantam a certain length of time prior to a show, and a few other little aids or "tricks of the trade" in fixing up exhibition specimens. It will keep the judge guessing just where to draw the line in most of the instances stated above.

However, the disqualifying clause that has caused judges more trouble and annoyance than all others in the past reads: "In all breeds required to have unfeathered shanks, any feather, or feathers, stubs or down on shanks, feet or toes; or unmistakable indication of feathers, stubs or down having been plucked from same." The difficult part the judge must play is in determining whether feathers have been plucked from the shanks. The defect-finding judge will do the microscopic act in order to discover the hole or incipient stub. The experienced judge will obey the Standard admonition at the foot of the rule for "General Disqualifications," which reads: "Under all disqualifying clauses, the specimen shall have the benefit of the doubt." If the naked eye of the judge cannot detect a stub or "unmistakable evidence of feathers having been plucked," no magnifying lenses or pen knives need be resorted to in order to discover a puny stub located somewhere on the otherwise clean shanks of a specimen. Exhibitors are human and will do all in their power to prepare a bird which will pass muster with the average judge, but they will frown on the adjudicator who calls to his aid magnifying glasses or surgery when examining the legs or toes of fowls.

Size and Condition.—The size and condition of an exhibition specimen often determine its fate in the show room, but great care should be exercised by the judge when handling birds that appear large and look immaculate in their feathered garb. Looks are often delusive, especially in the artificially prepared exhibition specimens such as judges are confronted

with in the white-plumaged varieties, and not infrequently in the parti-colored ones. Cochins which appear immense in size in their very loose feathering which has been curled and fluffed up by the skilled hand of the exhibitor, may fall short of the Standard weight, although they look to have both size and weight.

Size is a relative term, so when two specimens are compared, the one that is apparently the larger will win, other points being equal. But the weight clause is the only safe and correct rule to apply in such close decisions.

It is also well to bear in mind that the specimen over Standard weight, while larger in size, may be coarser in type. As the veteran Light Brahma breeder and judge once remarked to an old judge who awarded a twelve-pound Light Brahma hen a prize over one that fell a trifle under the Standard weight: "When we want meat, we go to market for it where we can buy it for a shilling a pound." Size and overweight do not make Brahmas, and every pound over the Standard weight destroys the type by making the specimen coarser.

What applies to Light Brahmas will apply with equal force to Plymouth Rocks, Wyandottes, Rhode Island Reds and other breeds subject to weight clauses, where it is desirable to maintain the correct typical form of the brood.

The size and weight allotted the various breeds in the American Standard of Perfection is based on the careful judgment of the poultry breeders of the United States and Canada, so that a strict adherence to the weight clauses, when judging standard-bred varieties, is compulsory.

Relative Value of Condition.—Condition is given but four points in the "Scale of Points," for nearly all breeds, the exceptions being Sumatras, Games and Malays, which have ten, six and eight points allotted to them. As the last three mentioned breeds possess special characteristics in plumage, condition is a most important factor when specimens of these fanciers' breeds are exhibited in the show room.

But in the American classes four points are sufficient, as few breeders and exhibitors will send poorly feathered or ill-conditioned specimens to a winter show. However, at a summer or fall show, due allowance must be made for the condition of adult specimens, as few if any are through their natural molt, consequently will not "shape up" like a finished specimen, one that has molted in a completely new garb of feathers. Nevertheless, shape can be approximately gauged by care-

ful inspection of the body, the breadth and length of the back and breast sections, as a rule, furnishing a good indication of what the bird will develop into when in full plumage. It is well to bear in mind that an adult specimen exhibited at an early show, albeit in full plumage and exhibited in excellent condition, may be greatly inferior in color markings to one heavy in molt.

Typical Shape and Color.—"Shape makes the breed, and color the variety," is an old accepted belief among poultry breeders which obviously makes types or shape all important in a breed, and no judge can afford to sacrifice shape for color alone. American poultry judges in most instances have accepted and followed this belief, but in England the type has not received the consideration at the hands of English judges the Standard demands, a fact which has led progressive poultry editors and breeders to issue warnings in the poultry press, demanding that greater value be placed on type and lesser consideration be given to color.

The American Standard of Perfection in the Scale of Points for the American classes, allows nearly an equal number of points for color and for shape, aside from comb, which places each on an equal footing, consequently both must receive the same consideration when specimens are judged at a poultry show. But great care must be taken in balancing defects, especially in varieties where color markings may be so strikingly beautiful that the judge must accord to such their full value always, no matter what the defects in shape may be. To pass by a magnificently Penciled or Barred Plymouth Rock, simply because it may have a short back or lean neck, is not consistent with careful and sound judgment.

The Standard demands that such consideration be given to both shape and color, and what applies to Silver Penciled Rocks, for instance, whether English or American bred, will apply to all other varieties in the American, English, Mediterranean, French or other Standard classes. The Standard rule in applying the comparison system when judging typical shape, reads: "In awarding prizes by comparison, judges must consider carefully each and every section of the specimen and not allow color alone to influence their decision. The vital importance of typical shape is to be borne constantly in mind, at the same time giving due consideration to color in all sections, including under-color."

And in judging size, the rule to be followed is: "In determining size, the judge shall decide by comparing the specimens in competition, with due regard to weight in all breeds and varieties where weight is required by the Standard. When a bird fails to attain, or in case it exceeds the size proportionate with type or shape, it must be discounted quite severely."

If poultry judges will obey and carry out these two rules when adjudicating their classes at poultry exhibitions, satisfactory judging will be the rule. For a thorough knowledge of the Standard requirements of all breeds and their varieties and of the rules governing the awarding of prizes to same, poultry judges (especially the younger ones) should make it a point to visit the larger winter shows for the purpose of studying the winning specimens in the different classes; a surpassingly beautiful bird in shape and color will make a lasting impression on the minds of close observers, and a poultry judge should be the closest observer of all. (J. H. D.)

SECTION II.

THE EXHIBITOR'S PART

CHAPTER I.

EXAMINATION OF CANDIDATES FOR SHOW HONORS.

CHAPTERS upon this topic are generally written under the title of "Selecting for the Show Room," but selection is always accomplished by examination; in reality it is the result of several examinations from different angles, the candidate for show honors passing successfully through at least four successive examinations before it is finally crated and shipped to the show room, where it is to undergo final examination at the hands of the official arbiter, whose decision, should it be final as it usually is, will determine whether this particular specimen was worth while, or whether it was a "misfit" in that particular select company, and whether your energy was well directed or misspent. Chances of misdirected effort or of selecting to little purpose increase with competition, but so do also the benefits you derive from winning in such competition and in such proportion as the competition is keen. Your interests demand that misdirected effort in all directions be as far as possible eliminated. That basic law of success is just as applicable when selecting for the show room as at any other time and in any other place. To select wisely and well, your best candidate means much to you and something to the poultry-loving public. To you it means the saving of labor, expense and perhaps chagrin. To the public, the elimination of poor and mediocre specimens means a better impression and increased interest, attitudes worth cultivating.

The Processes of Selection.—The process of selection of show birds as it is practiced by the experienced exhibitor, if analyzed, consists of four steps: the candidates are quite loosely selected, then examined closely, and carefully and critically compared one with another, after which the selection by casual observation is confirmed or rejected.

The First Step.—Selection is dependent upon examination, casual at first and superficial, necessarily, as it is the superficial attractiveness of a bird that must first catch the eye. An exceptionally good comb, stylish carriage, symmetrical form, strikingly handsome markings, or brilliant colors, are superficial qualities that please and win the specimen possessing them, almost instantly, a first consideration.

"Catchy Quality."—This "catchy quality" should figure largely in the selection of show specimens when not accompanied by too serious faults as it means beauty, and beauty coupled with utility is the keynote of the Standard.

To explain the phrase "catchy qualities" would be difficult, though to define it would be easy. It simply means beauty or attractiveness. To state exactly of what it consists is practically impossible. However, it is a quality recognized by both the professional and the amateur and must always be reckoned with. Many birds with the catchy quality lack in certain qualities and they become what is known as "fillers."

"Fillers."—Fillers are used, however, in the keenest competition and one expects to take chances with a few of good quality if they have characteristics to which the judge is known to be partial. Fillers are, in general, birds of three classes, first: birds of no more than average merit but one phenomenally good section, or quality, which, if it is located in some prominent section, makes the specimen very attractive; second: often, however, a specimen having such phenomenal qualities in one or perhaps more sections is correspondingly poor in possibly an equal number, yet it is possible that the judge and even popular opinion will be overawed by the excellence of the section of phenomenal merit, while the faulty sections will be overlooked; third: the class of birds that are known as good all around specimens, though they have no serious defects, they are very fair in all particulars and meet technical requirements very well, but they lack attractiveness. While the analysis is satisfactory, the catchy qualities are decidedly lacking. Without these, it is seldom that a bird is returned a winner in close competition.

The Second Step.—Close Examination.—A winning specimen needs more than the power to attract admiration. It needs also the power to retain it after examination, which with one who has accepted certain standards of beauty means that the specimen must meet the requirements of such a standard as the person who conducts such an examination has adopted.

The first step, the selection of candidates by casual observation, usually at a distance, is followed by an examination which should involve the closest and most critical scrutiny, section by section, as to their conformity with the requirements of the Standard of Perfection.

Mental processes, even with the best trained minds, are too restricted to attempt to accomplish this as a whole or in one operation. The specimen must be examined carefully, section by section, for both color and shape, beginning with symmetry and ending with legs and toes, forgetting none. Both the merits and defects of each must be accurately weighed, the defects because they count against the specimen, the merits because upon these depend its position in the awards. The examiner must expect to find both merits and defects. These are two qualities that all birds possess. None are perfect, and no well-bred specimen is entirely devoid of merit. Unusual merit in one or more sections will offset defects in others. Good color will offset good shape, and vice versa. In some varieties good undercolor offsets to a certain extent defective surface color, while in other varieties undercolor may be so universally good that but little attention is paid to it in estimating comparative merits of two or more exhibition specimens. In still other instances, undercolor is almost wholly a breeder's point, not considered very seriously in the estimation of show merit. The actual consideration of the different phases of each section of each variety obviously cannot be treated in this chapter, as such consideration forms a large part of the entire treatise.

But it is in place, however, to call particular attention to the chapters on common defects of plumage and the accompanying illustrations, which should be studied minutely after a good mental digest of the standard requirements of the particular variety in question. Many other chapters in this work would assist the exhibitor in selecting the strongest candidate for show honors, as there is much correlation between breeding and exhibiting, and the understanding of the origin and development of a breed or variety increases the capacity of an individual to comprehend the trend of public opinion, which as well as the Standard has its influence on the judge's conception of what an ideal fowl of any variety should be, as it has had, heretofore, its influence upon the Standard's printed description of the same thing.

Prime Requisites Overlooked.—There are, moreover, some qualities which must be considered that are usually overlooked as Standard qualities, though they should not be. Health, vigor and a generally attractive appearance are surely most essential considerations in final selection by exhibitors of long experience. It is clearly the intention of the Standard to make these requirements of prime importance. Health is demanded under the section of "condition," with but an allowance of four points, it is true, but even at that it is next to impossible for a bird to win unless it is in perfect health, or we might better say, in good condition, which means more, including both good health and good feather. It is not necessary that a specimen should lose the total allotment of four points to have a cut on condition fatal to his chance of winning. Often a loss of one point or even of one-half a point in this section is fatal. It is generally essential that the bird be perfectly conditioned, if it is to be a possible winner, and such a condition is acquired only by perfect health, which is confirmed, perhaps, by the fact that it has already been selected as a candidate, which should be reaffirmed by closest examination. To win in close competition without this quality would be difficult, but alone it is not enough to win in good competition, though it is sufficient many times to win the admiration of both the novice and the expert; that of the latter for only a limited period, however, and that period comparative to the degree of his proficiency.

Comparison of Candidates.—During this process many things must be taken into consideration besides comparing one section with another for shape, for color, or for both. These are: The condition of the bird, the health, development in regard to shape, in regard to plumage, weight, time of show, or length of time available for process of conditioning.

When the time for the final consideration of the different candidates with these requisites in mind draws near, much depends on whether the show is to be judged by score cards or comparison. For one thing, when the score card system is to be used, weight becomes of much importance. A bird that is a pound underweight loses according to standard rules two points, and the ones which are so handicapped must excel one-half of one point in four sections to get on even terms with one not thus handicapped. This statement gives the reader an idea of the handicap of underweight, yet it is not unusual to see specimens on exhibition more than a pound underweight,

and then the handicap becomes even more serious. Very often birds of naturally very superior plumage are justly defeated by fully matured, up-to-weight specimens. As a rule, well-balanced birds, or birds of good even qualities do well in score card exhibitions. High scoring birds are often those whose fundamental qualities are perfect. If a specimen be fully up to weight, in good plumage, in perfect health, and perfect in beak, eyes, and legs, and has a nearly perfect comb, it is a hard bird to score low, even if it has only fair plumage. The foregoing attributes are what we term the fundamental qualities, and the previous statement is particularly true, if, in addition, the specimen has good shape.

When the Comparison System is Used.—At exhibitions governed by the comparison system, first impressions undoubtedly carry more weight than under the score card system, which compels minute inspection, not merely invites it. First impressions are, therefore, important and such birds as described near the beginning of this chapter are the ones which catch the eye at first glance and are good selections as a rule. Not only do first impressions count more but if a specimen under the comparison system fails to "score" with the first impression, that specimen is, then and there, down and out. It must possess some strongly attractive feature, and it must be one that impresses the judge quickly. What that feature must be varies widely and depends somewhat upon the likes and perhaps the dislikes of this or that particular judge. It might be shape or it might be color. It should be without question even all-around quality. Thus it will be seen that a study of judges as well as a study of standard requirements is very often important in the solution of the big problem, "HOW to WIN prizes." Again, the excellence of the markings of one or more sections, possibly the condition or behavior of the specimen in the show coop, the ability to pose, very likely will have considerable weight with the judge that is just a little emphatic about shape requirements.

It would be well at this stage for the novice to take from the Standard a mental or written list of all possible defects for each section for color and markings. Defects of shape are not so complicated and are, therefore, more quickly seen. For example, if a specimen of the Buff variety was to be examined, a list something like this would assist the novice: Correct shade of color, form, uniform surface color, edging, mealiness, shaftiness, sections too dark, sections too light, undercolor too light, black or white in tail, in wing, etc.

CHAPTER II.

CONDITIONING FOWLS FOR EXHIBITION.

Successful showing consists of two things, having the quality and showing it properly. The gardener who raises roses for the market strives to place them on the market when they bring the greatest price. The man who raises broilers for a living times his product for the highest market. It is the exhibitor's business to time his birds for the exhibition just as the gardener and market poultryman time their products to be at their best at the most advantageous season.

Regulating Development.—The second principle involves the science or art (may we say knack?) of properly rearing a bird and timing it for the exhibition.

The phrase "Every dog has his day," will never be applied to anything more forcefully than to exhibition poultry; the bird that was a "Never Beaten" last week is a "Has Been" this, and we see it exemplified time and time again. There comes a time in the life of every young bird when, seemingly, a transformation from the awkward, angular lines and short, scant, rough garb of the chicken to the full, round contour and abundant, sleek, profusely flowing feathered dress of maturity takes place, which, on account of its brevity, appears almost magical. It is well then, to estimate the time, even the moment, which you can from years of experience with your own strain of birds, when your birds will be fully matured in form and fully fledged, as the growing proclivities of two strains are seldom the same. Note mentally the progress and development of your birds each year. If your memory is incapable of carrying the relative progress of your birds with reference to age and development, keep accurate notes. They will be both interesting and instructive if kept in connection with a feather album, which is always a valuable asset to any breeder's library.

Condition, All-Important.—A good exhibition specimen must have, first, a certain degree of excellence in size, shape and plumage. Excellent quality in all of these particulars except size passes unnoticed in poorly conditioned birds.

We see then that condition is an all-important, overshadowing essential to a winning bird and without approximate perfection in this particular, specimens even of great quality

naturally will seldom win in close competition. With some varieties, the relative places on the award list are but expressions of the degree of perfection of condition of the specimens shown. To win, some varieties are more dependent upon condition than others. Most prominent of these varieties that depend largely upon condition to win are all black and all white varieties, and varieties of the red-black color patterns. Some will object to this statement as too broad and certainly condition with nothing back of it will never win; but just as certainly will perfect condition cover many defects and enable a bird of average exhibition quality to win over one naturally superior.

Condition, Examined.—What, then, does condition mean? What does the word embrace? Many things and various things: in some birds, it means the proper fluffy effect or looseness of feather; in others, it may mean the opposite or hardness of feather, and in still others, the American varieties for instance, a mean between these two extremes; in all varieties, the necessary weight, the health and vigor that gives a bright eye, glowing face, slick appearance and gloss of plumage. The shape that a specimen displays in an exhibition cage depends upon condition, for without good poise no specimen appears to good advantage and poise is in most every instance dependent upon condition. Condition of exhibition specimens consists of perfect health, full developed form and plumage, but not over-development in either, the required smoothness and hardness or looseness of feather, the acquired temperament and docility to assume and maintain perfect poise, or correct carriage without which no specimen can create the impression of form.

In the acquiring of good or perfect condition, two principles become involved and must receive consideration. The first is that—

Winning Quality Is Hereditary.—Good showing qualities and aptness for good condition are just as surely transmitted from generation to generation as any characteristics of the species. You have often observed, if you are an exhibitor, that some birds condition easily while it is almost impossible to make others acquire the smoothness of feather and the style or poise that gives them the winning quality. Both of these characteristics, sleek plumage and poise, are hereditary in fowls just as much as good combs, strong undercolor or straight barring. A Barred Plymouth male that lacks a certain amount

of style should be rejected just as quickly as one that fails in undercolor, and any male that does not possess the attribute of smoothness of feather should not be considered long as a candidate for the head of a breeding yard. So much for condition and heredity. Do not accept the testimony of others, rather make careful observations along these lines if you wish to develop a line of winning specimens.

Fresh Plumaged Birds Win.—Young birds that have just attained maturity are fresh and bright in plumage and fresh and bright birds are certainly attractive and for that reason are the ones that usually win. This necessitates rapid growth and that demands free range and skillful, judicious feeding. This is the problem, then, to solve: how are some birds to be pushed forward and some held back, so that the entire string may be shown in uniformly perfect condition?

Right here is where the writer will prove disappointing, because he knows no magic that will mature the immature or freshen the fading colors of those that are past prime.

The Art of Conditioning No Mystery.—There are a few who cling to the idea that there are sublime methods for accomplishing anything. There are a few who believe that winning specimens are made so by occult means. Were we to find some agent which would effect such a marvelous transformation in our flocks, we should have accomplished no less than the alchemists of old undertook when they sought to find the Philosopher's stone, a reagent that would form a panacea as well as transmute the baser metals into gold. As well dream the dreams of the old alchemists as to expect to make winning show birds by any except the most thorough processes of nature.

A prominent breeder asked another at one of the New York shows how he managed to bring such a good conditioned string of cock birds to the show year after year. "Would it be asking too much to tell me?" said he. "Certainly not," replied the other, "we just give them ample range, good food and keep the lice from them." The questioner made it very clear that he did not credit the answer. He was evidently a believer in the occult. But as a fact, aside from selecting for breeding year after year very smooth males, that successful exhibitor did nothing more than he suggested to his questioner, who was and still is one of the largest breeders of his variety.

The Pleasing Bird Wins.—The question naturally arises, "Why is a winning bird?" The answer would seem to be one

that most nearly meets the requirements of the Standard of Perfection. But is it? It is not always, even with the most conscientious and the keenest judges. There is in some birds a certain quality that is very hard to describe unless we limit that description to one word and call it the "catchy" quality, or the "pleasing" bird, as it is expressed by the more refined exponents of the craft.

Under our present mode of comparison judging, and this mode has its advantages as well as its drawbacks, the order seems to be that the catchy or pleasing specimens are picked out and then examined for defects according to the judges' interpretation of the Standard. Under this method the bird in poor condition and the one that has not catchy qualities fare alike, being passed by while the pleasing bird, if he has no glaring faults, has a good chance to win.

Too Close Cooping.—There are several methods of more or less merit of fitting for the show room. The best is to let the bird fit itself; the poorest, and that which is more generally used, consists in confining the bird to an exhibition cage two or three feet square and either starving it or stuffing it as the fancy of the owner dictates. In such quarters, this bird has the pleasure of moping around for two or three weeks. It has a clean coop, perhaps, plenty of the best of food and a nice bright tin cup to drink out of, but after all that has been done, this bird is being subjected to the most unnatural life that a fowl could live. If the cage is kept clean, the bird is clean also, but its appetite soon diminishes, its digestion is soon disordered, its feathers soon become rough, and its head loses color. The bird deteriorates from the moment that it is put into the cage. The only advantage is that you have a tame bird. Unless it is endowed with an unusual amount of vitality, it has become so lifeless and docile that it should not even, in many cases, be admitted to classification in the gallinaceous division. Of all the idiotic methods that poultrymen employ, this is the most stupid and foolish.

Range the Best Conditioner.—Those who have exhibited at the early winter shows say the early part of December or the latter part of November may have been favored by one of our occasional warm autumns, when the weather permitted keeping the birds out on the summer runs. Under these circumstances the birds probably went into the shows in the best possible condition. If such is not your experience, it is the experience of others. It should be therefore, our aim to pro-

vide the candidates for show honors with as near natural conditions as the usual severe winter weather and sometimes several feet of snow will permit. The greatest benefits that a bird can receive are, of course, derived from range conditions, but under the conditions mentioned, range is out of the question. How, then, can we supply a substitute? By affording the bird a chance for exercise and by compelling it to exercise if it is not so inclined, and by supplying those things that confinement and the season of the year rob it of. Added to these, there are some artificial methods that are simple and harmless which we shall speak of later.

Food and Exercise.—Take the case of a young male bird that is to be conditioned for winter shows under the usual conditions when protection from the weather is necessary and confinement unavoidable. Growth must be promoted and health of the most vigorous kind maintained. The quarters are the first essential. He should be penned by himself, with one female, or some younger cockerels. In general the larger the pen, the better, but one eight feet by nine, and even smaller, will answer in most instances.

The floor should be of dry, clean sand if possible to obtain it at a reasonable amount of expense or trouble, covered with a litter of dry straw. The straw need not be cut, as the birds, if properly trained, will break it up in a short while. This litter should be from two to four inches deep, varying with the size of the birds; the larger the birds the deeper the litter.

The Feeding Method.—In the morning throw in a small handful of scratch feed, scattering it well. After an hour of brisk exercise, give some warm mash but do not allow them too much, because if not hungry, the birds will not exercise. A heaping teaspoonful or two is about all that the average bird will consume without becoming inactive, and unless he eats this eagerly and rapidly, it is too much. An hour or two later scatter more scratch feed and set them to work again. If the birds are immature and you wish to force them a little, feed another small amount of mash at noon. An hour later a few kernels of small grains will induce more exercise, while for the evening meal, a generous supply of good grain should be allowed.

It should be kept constantly in mind that rapid growth depends upon the amount of food the bird can consume and assimilate, and that exercise stimulates the appetite, aids digestion and increases assimilation of the foods consumed, hardens

the muscles and promotes the most rugged health and vigor; which facts sufficiently explain the reasons for feeding often in small portions.

Green food, he should have a little of and but a little. Grit and oyster shells he should have in abundance at all times.

A Good Mash Makes Flesh.—A mash helps the bird to acquire flesh, but too much of it overloads the crop and hunger being satisfied, the bird refuses to exercise; consequently, it will not eat as much nor can its system assimilate as much. The ingredients of the mash may vary somewhat. Cornmeal and bran may be mixed with a very small quantity of white flour middlings in such a proportion that the mash is a substantial but not a sticky mass. It should be mixed with boiling water, merely hot water does not do. It must cook to get the desired effect. To that end it should be packed closely together and covered for a time. After standing for half an hour, uncover and stir. Allow it to cool until it is warm but not hot; then you have the food for a meal that the fowls will relish.

For scratch feed, any of the small grains will do. Oats are very good, so is wheat if you are not using it for a night feed. But the prepared scratch feeds are to be preferred above all, if they are made of good grain, for two reasons: first, for the variety they supply, but principally for the fact that the grains are cracked into small bits, which make the fowls do the maximum amount of work for the minimum amount of food.

For the final feed at night, nothing compares with wheat of the best quality. This is the main food, but may be alternated with barely with good results. For fowls that are inclined to get too fat, barley is preferable to wheat.

Forcing Immature Birds.—Birds that are very immature and that it seems advisable to force along as fast as possible may take a quite different ration from those that are grown or have ample time to grow. An excellent mash may be made as follows: Put hamburg steak to boil in cold water, allow it to boil until the amount of water is small, and then thicken with cornmeal and a little bran. This may be fed once a day, but not in such quantities that the bird is forced off his feet. This bird should be kept scratching as the others, but he may, if hearty, be fed more heavy grains. A good variety will force a bird along faster than a limited diet.

A very appetizing meal is made of broken crackers and cornmeal and bran. The birds like this, especially if the

crackers are the sweet kind, and if not, they can be sweetened with sugar or molasses. The value of the food as a weight producer may be further enhanced by mixing with scalded milk. It should not be forgotten that these birds must be growing feathers and that it is sometimes necessary to aid them in this. Nothing that I know of is any better for aiding feather development than dessicated fish. A little may be added to one of the mashes each day.

The Best Forcing Menu.—To make myself plain, the best forcing feed consists of the broken scratch feed, the sweet cracker mash and the beef and meal mash with wheat or mixed grain for the hearty meal at night. In very cold weather a few kernels of whole corn might be thrown the birds, after the evening meal and the last thing before they go to roost. A very little buckwheat may be added to the grain mixture.

Feeding for Color.—With reference to feeding, two classes of birds might be considered, as each class must be fed in a different manner. They may be divided into white birds and others. The methods of feeding each differ, but the methods that have already been described are tolerably well suited to either class. These methods can be modified somewhat and are then better adapted to each of the special classes.

Feeding White Birds.—By white birds, I refer to those that have white in their plumage, not necessarily only the solid white varieties. Barred, Silver Penciled, and Columbian Plymouth Rocks, for instance, should be fed precisely as pure white birds are.

It is a generally recognized principle that clear white color, often described as pearl white, chalk white, or dead white, cannot be obtained in its clearness and purity when these white birds are allowed oily foods. Therefore, yellow corn, meat scraps, meat fats, or any foods of an oily nature are excluded from their diet. Those who wish to feed meat and are still very cautious, may boil fresh beef, allow the liquor to stand and cool, when the fat may be skimmed off. The meat and broth may be reboiled and stirred into the mash, which has already been thoroughly mixed. Cut green bone should be treated in the same manner, if fed to white or partially white birds. After boiling both lean meat and green cut bone, you will find an amount of fat that will surprise you.

Foods That Develop Gloss.—For the varieties which require a glossy plumage, the fats and oils are a great help if

not an absolute necessity in getting birds of certain colors into good condition. The best foods to produce gloss are corn, buckwheat, sunflower seed, beef scraps and beef tallow. These, with the single exception of corn, cannot be used in quantity or as staple foods, as they "age" the plumage and impair digestion if given in excess. A wonderfully glossy plumage may be produced in a remarkably short time if conditions are favorable. Besides oily food, plenty of sunlight and housing conditions that embrace dryness and very moderate temperatures are necessary.

Constant attention wherever administered is beneficial to fowls for whatever purpose kept, and particularly so to fowls that are being conditioned for shows, but is not absolutely necessary. Many exhibitors are so situated that they cannot attend their fowls during the day. I believe that the best method they can pursue is to feed the mash late in the afternoon, and in the morning, give the birds grain in deep but light litters to scratch for during the day. Many contrivances may be devised to induce or even compel exercise; for instance, a cabbage may be hung so high that they will have to jump a little to reach it. Grains may be fed in automatic feeders in connection with deep litters, etc.

Grouping the Birds To Be Conditioned.—The grouping or arranging of the birds with relation to their association with one another has oftentimes much to do with their development. A male put alone sometimes loses his interest in life, but not always. If he is a cock bird, one or two hens that are active and alert should be placed with him. If it is necessary to raise his weight, feed him alone, once or more daily. A cockerel may be allowed to run with one or two hens, but if he is not too far along, it is preferable to allow the society of two to four young cockerels. If he maltreats them, there are but two alternatives left, the society of females, or isolation. Young males, not too far along, generally do best in flocks of six to eight, but these must have grown up together. Even then the time will come when they must be closely watched. At the first signs of fighting, both birds must be removed. Females can be kept in groups of four to six. Quarrelsome females must be kept alone, as they are sure to ruin the good appearance of their companions.

Taming the Show Bird.—A show bird should be tame, so that it does not become frightened when handled. The advantage that a bird that will pose while the judge is in front of

the cage and handling it, has over one that gets all out of shape the moment the judge touches it, is obvious. While continuous cooping of any fowl is a crime against good condition and even against good sense, a half-hour a day or so is necessary for all candidates for show honors. The bird may be tamed quickly while cooped by offering tid-bits such as meat and kernels of whole corn from the hand. By stroking with the hand, the bird can be taught the correct pose for the show coop.

Washing the White Fowls.—In these days of strong competition, an unwashed white bird is practically debarred from winning. An unwashed bird, be it ever so white, looks very cheap beside a well-washed one of much inferior color. This is a branch of the industry in which a certain few have become so proficient that it is practically impossible for anyone not expert in this line to defeat them. There are many soaps and preparations used for washing white fowls, but Ivory soap and soap-bark are the most generally used. The best washers thoroughly lather the birds to the skin, and use two rinse waters. The last water contains a very little blueing. This will show in the feathers if too much is used and beginners are almost sure to use too much. If not thoroughly rinsed, so that all the soapy water is removed, the feathers will curl and crinkle.

In late years much is hinted at concerning the use of bleaching agents that bleach a creamy or yellow bird, otherwise fine, so that it becomes a winner. No doubt, hydrogen peroxide, the active agent of which is a free atom of oxygen, is used to a certain extent. So is ammonia and other cleaning agents. Their value lies more in their power to remove stains and dirt than in any real bleaching process that takes place.

The process of drying is very important and is in itself an art. The most effective method of whitening a bird is to repeat the washings. Persistency in this counts as in everything else.

The best treatment for the comb, face and wattles of a perfectly healthy bird is to wash in soap and water, dry and let alone. When the face does not show good color, massage and treat with a very small amount of vaseline. To keep the color in the face, repeat the massage with a small bit of vaseline. This treatment is simple and will bring more color than would be supposed. There are many lotions and drawing, burning liquids that are applied, but they are all at best but

temporarily efficient. A short while after the application, the head possesses less color than before.

Cleaning Shanks and Toes.—The shanks and toes should be washed in warm soap-suds, dried, and then treated with cottonseed oil, vaseline, or something of that nature. When there is much dirt under the scales, it should be removed, which can best be accomplished with an ordinary wooden toothpick dampened with some cleansing liquid. Many shanks and toes are improved by brushing dry, with a stiff brush before using the soap and water.

WASHING AND CONDITIONING WHITE BIRDS FOR THE SHOW ROOM.

Washing white birds properly presents one of the greatest difficulties to the amateur fancier. To get any bird into the show room in perfect condition, is really quite an art; and white birds present the additional problem of washing. There is, however, no reason why anybody, who is careful and painstaking, can not show white birds in good condition. Birds other than white seldom require washing, except where a bird has become very much stained or soiled, in which case a careful washing will improve them. The following instructions about temperature of water, in drying room, and other conditions, will, if carefully followed, bring success.

Coop Training.—All birds that are to be shown, whether they are to be washed or not, should be cooped up in cages similar to those used in the shows. Coop them up for about three days, so they may become accustomed to the cage and to being handled by their attendant. Then put them back into their usual run for a few days. Alternating in this way, they will get the necessary coop training and show-manners without becoming stale from too long confinement in small quarters. Unless the bird has some such preliminary training, together with such special feeding as his condition requires, no matter how excellent the wash, he will not appear at his best. This preliminary training should extend over a period of about two or three weeks.

Equipment.—Birds should be washed from forty-eight to sixty hours before they are shipped to the show room. If you are going to wash many birds, a rubber apron and rubber boots will be necessary. The details of washing white birds

are as follows: Start with three ordinary wash tubs about half full of water at a temperature of from 103 to 110 degrees. Birds can be washed in a room at a temperature of about 70 degrees, which is as warm as an attendant can work in comfortably.

The Process.—Grasp the bird firmly by the legs, lower him into the water, and begin washing by lathering him with a cake of soap. Soap counteracts the oil in the bird's feathers and allows the water to penetrate to the skin. Be careful in handling the feathers until you get them thoroughly wet; afterwards you can rub them enough to build up a heavy lather all over the bird, very similar to the process of shampooing the hair. Then rinse this lather out, and repeat the same process. If the bird seems very dirty, give him even a third lathering. The rinsing of the heavy lather out of the feathers seems to carry all the dirt and stain away. Then go over the bird's comb, face, wattles and legs with a nail-brush and heavy lather. Also scrub the wings and any stained spot on the bird's plumage with the nail-brush. Then thoroughly rinse the bird successively in the second and third tubs of water. You can wash from four to six birds, according to how dirty they are, before changing the water. Then empty all three tubs and start again with clean water.

The Water.—The character of the water you use will influence results to a considerable extent. Soft water, that is also white, will give better results than hard water. Sometimes water contains iron or other mineral substances that affect the color and the finish of the feathers. You can generally find suitable water in every locality, by a little effort, or you can catch rain water, melt snow or overcome the difficulty in some way. Borax or ammonia are sometimes used to soften hard water, and they help some; but all such agencies have a tendency to injure the fabric of the feather, and you do not get quite the beautiful satin finish with anything but pure, naturally soft water and some mild soap. All of these things have to be carefully considered.

Blueing.—Until very recently, all white birds were b'ued slightly in the last rinsing, and this practice was used by all conditioners for many years, but is gradually being abandoned, for the reason that otherwise well conditioned birds were left out of the awards every year on account of being too blue, streaked with blue, or in some way presenting a bad appearance on this account. If done just right, this may add slightly

to the apparent whiteness of the bird; but it is impossible to give explicit directions for blueing, for the reason that water from different sources requires different amounts of blueing to produce the best results, and the different blueings that are sold throughout the country differ very materially in strength and composition. So, if you adopt this practice, you will have to experiment beforehand as to the amount of blueing you will use. The amount that produces good results in the laundry is generally also about right for birds.

Drying.—After the bird is washed and rinsed, put him into a coop similar to those used in the show room; and if possible, one having a wire netting bottom, so that he can drain out for about fifteen minutes. Then transfer him to a coop in a room where the temperature is from 85 to 90 degrees. He will dry out there in proper shape in three or four hours. Then gradually reduce the temperature to about 70 degrees, at which temperature the room should be kept for eight or ten hours longer. After that he should be able to stand normal temperature as before washing.

Some of the larger farms have special rooms fitted up for washing and drying, arranged so that they can have rooms at different temperatures. Lacking this equipment, you can get about the same results by moving your birds to and from the fire or other source of heat. You can tie a thermometer to the front of the coop in which your bird is drying, and keep him in about the correct temperature in that way. To a certain extent, the actions of the bird indicate the proper temperature; as, when he is shivering, get him closer to the fire; and, if he begins to pant, it is time to move him back. Individual birds differ as to the amount of heat they need and can stand; and they will indicate, to the observant attendant, the proper procedure.

Drying Long Tails.—In washing a Leghorn or any bird that has long sickles, it is well to fan his tail out after he has been drying about an hour, or just as the feathers begin to web. Let one person hold the bird, and an assistant fan the tail for about fifteen minutes. Otherwise the sickles are liable to dry twisted or to come with a poor finish on the edge.

Impossible Specimens.—Some birds have a type of feathering that does not improve by washing. Anyone who has washed many birds can detect this at a glance, as a thinness of the fabric of the feather, as we express it. This style of feathering seems to go to pieces during the washing and dry-

ing process, shrivel up and finally presents an unsatisfactory appearance. So it is always well to select, train and wash a few more birds than you actually intend to show. This precaution will save you disappointment, should anything go wrong with any of the birds up to the moment that judging actually begins.

One of the objections to washing birds for exhibition is that the same birds can seldom be shown more than twice during a single season; and sometimes but once, if you want to get the very best results. The reason for this is that washing and drying takes a good deal of the natural oil out of the feathers, which causes them to become brittle and they will begin to break up, and eventually to lose the natural sheen on the feathers which makes them look so attractive. However, any bird that is to be used for breeding should not be shown more than once; because, in conditioning, washing, and showing the bird, getting him home and rested, etc., and ready to go into the breeding pen, will occupy three weeks or a month. During this time the bird has been inside in a warm temperature, and it is something of a shock to his system to go back into a breeding pen in what may possibly be zero weather. Still a strong, vital bird will generally stand this for one trip; but, when you keep repeating this for show after show, the bird becomes softened and loses his natural resistance to cold, with the result that he contracts a cold or in some way gets out of condition. So, for this more vital reason, birds that are valuable as breeders really should be shown but once in a season. It is hard and cruel to keep a bird on the jump from one show to another from August until late in February. This practice is generally the result of greed or ignorance. However, such a practice brings its own penalty; because, after such treatment, your fine bird will not breed you the sound, vigorous stock that he otherwise would.

To Remove Stains.—If you should find a grease spot on one of your birds that did not come out in the wash, you can remove it by using gasoline; but you must exercise great care in doing this. Take the bird into the open air, and do not use more than is necessary. It is possible that you might just pick some birds off inside.

Feeding.—After the birds are dry, feed nothing but hard corn until after they are judged. Be sure that you have suitable shipping coops.

Shipping.—A good many birds lose their chance of winning by poor shipping in transit to the shows. Inspect the coops to see that they are high enough that the bird can easily stand upright; also see that no sharp nail points are exposed on the inside, which may tear the bird's comb or otherwise damage him.

For the ordinary show where competition is not very strong, perhaps all this preparation is not absolutely necessary. It is possible that you might just pick some birds off the roost the night before, and get away with it; but it is a good plan to always show your birds in their best possible condition. The more earnest effort you put into the poultry business, the better your standing will be with the poultry fraternity, and the more pleasure and ultimate profit you will get out of it. (M. L. C.)

CHAPTER III.

SHIPPING TO SHOWS.

Considerable attention should be given this, one of the necessary steps in showing fowls. Though it is but a single step and a short one compared with the number and length of time it takes to grow and to condition exhibition fowls, yet it is fully as important as any of the previous or subsequent steps in the process because of the dangers involved, due to unusual, strange conditions, such as confinement, restriction of feed and water, and the inadaptability of some fowls to such changes in the routine of life, to exposure to weather conditions, extreme in either heat or cold, to sudden changes varying from one extreme to the other, as when taken from a heated car in cold weather in which they have perhaps been packed all too closely together, and transferred in unprotected trucks to other transfer points or to the show room.

Shipments Dependent Upon Three Conditions.—From the foregoing it is apparent that three conditions are highly desirable. First, that the bird be fortified to withstand these changes of temperature and weather. The best means of fortification against these is to select naturally rugged birds that are in excellent health and conditioned to withstand these changes. This is, however, the subject of another chapter.

Second, that the style of shipping coop provided furnishes as much protection as possible against these changes and at the same time allows a sufficient supply of pure air to insure the good health and condition of the occupant or occupants. Because the shipping coop does not allow always for a sufficient supply of fresh air, the danger of overheating, particularly in express cars, is also incurred.

Construction of Shipping Coops.—The proper construction of a suitable shipping coop involves all these problems, also the question of how much the occupant may be confined without injury of either health or condition.

Large and Small Coops.—Obviously when the good appearance of the bird counts for so much it will not do to take the slightest chance of injury even if that injury merely consists of rubbing the plumage or the breaking of a single principle feather. Many claim that too large coops involve more and greater injuries in this latter regard than smaller ones. The idea advanced is that the bird breaks the feathers by turning around in the coop and that when the coops are so narrow as to prevent it, there is less liability to injuries of this kind. The styles of coops vary widely. One large poultry show will show scores of designs. Shipping coops are usually built of wood or have a framework of wood covered with cloth.

Cloth Covered Coops.—Cloth tears so easily that express companies will not receive cloth covered coops at single rates unless the wooden frame over which the cloth is put is so constructed that it will hold the bird even if the cloth is not put in place. Cloth covered coops, when the frame is constructed in accordance with these regulations, are very satisfactory except in extremely cold weather. They offer the advantage of good ventilation at all times and, it must be admitted, far too much when the weather is severe.

Wooden Coops.—Wooden coops are without question the most often used and the safest from many points of view. They are certainly stronger and less liable to be broken and it is for this reason that they are most often used. Ventilation is the difficult problem with wooden coops. If they are open in construction the birds take cold when left out of doors or in a draft for any length of time. If they are closed the birds sometimes smother when large numbers are shipped, as they often are when poultry shows are being held. This, of course, results from stacking a number of coops together. The coops in the center of the stack or against the wall receive an insuf-

ficient supply of air or become overheated. There is no known way to prevent this occurrence and at the same time properly protect the birds against the weather, unless the handlers or messengers of the express company will use reasonable precautions against overlarge stacks and overheated cars.

Material in Wooden Coops.—Wooden coops, as a usual thing, are made with solid sides and bottom and are left as open on the top as possible and still retain the bird or birds. The sides are usually made of three-eighths inch matched lumber and the floor of one-half inch, or sometimes thicker boards. A sufficient number of narrow strips cover the tops to keep the birds inside.

Dimension of Coops.—Some shippers make the top higher at the center than on the sides to prevent setting other boxes or packages which interfere with ventilation on top. Raised strips, one at each end, an inch or more thick, are sometimes used to prevent too close packing. This allows some ventilation, enough in ordinary cases. Open spaces at the top, and on the two sides, two inches or a little more in width are sometimes left and answer the purpose fairly well.

Elaborate coops of much heavier construction with hinged or sliding tops are often used. These afford, of course, rather more protection, but because they are much heavier, their use increases the cost of transportation very much.

Shipping White Birds.—Birds of white or light colored plumage are usually shipped in coops that are so constructed as to protect them from dust and dirt. This result can be tolerably well accomplished by taking cheesecloth or a similar fabric to the top of the coop, or by using closed tops and providing more ventilation through the sides. Large openings even on the side should be covered with burlap, cheesecloth, or some material that will prevent dangerous drafts and also, in a measure, keep out the dirt and dust.

While there is some danger of the plumage becoming soiled while in transit, by the dust and dirt that is in the air, there is also some liability from the coop itself, if it has been in use before. Consequently, all coops should be thoroughly cleaned before receiving the birds. This is a good plan to follow whether shipping to a show or customer.

The greatest danger to plumage aside from that of breaking feathers is that it will be soiled by the droppings. To prevent this possibility as effectually as possible a bed of some absorbent must be provided. Sawdust or planer shavings answer

the purpose as well as any material yet used, unless it is a combination of the same and long straw, with the straw on top. Clean, hand-threshed, rye straw is best suited to this purpose. While it is clean and unbroken, the droppings have a tendency to fall through onto the sawdust or shavings which adhere to them, absorbing the moisture contained in them, or covering them with a thin coating of whichever bedding material is used; being protected in this way and by the straw above, the plumage is kept clean. Unless shipments are very long, birds shipped in coops fitted up in this manner will arrive in excellent condition of plumage, provided, of course, that they started in that condition.

Feeding During the Journey.—When the journey is of such length that the fowls must be confined to their coops for more than two or three hours, food should be supplied. This should consist largely of the small grains, but a supply of green foods, which serve to entertain the fowls and keep the digestive tract in good order, is important because the fowls must feel their best to look their best. There is certainly a chance of their crops becoming overfull if the fowls are not accustomed to these foods. However, they should have been previously accustomed to them. The green foods should be of such a nature that it will not soil the plumage and in the case of white birds, greens are usually omitted from the bill of fare while the birds are in transit.

Shells and Grit.—A small handful of oyster shells and grit should be supplied. This is doubly essential because the fowls will in all probability be deprived of both during the show.

Whether water is necessary or not depends upon the time of confinement in the shipping coop. In cold weather birds may be deprived of water for twenty-four hours, or even a little longer, without visible inconvenience or discomfort if plenty of succulent food is provided. The more succulent the green food, the longer the period during which water may be withheld. Without water the fowls are less liable to be soiled in transit and usually arrive in much better condition than when water cups are a part of the coop fittings. When it is necessary to supply water in transit, cups that are partially covered or have a float should be used, particularly when white birds are shipped. After the birds have been washed and conditioned for exhibition, shippers of white birds supply water only when absolutely necessary.

As the birds must usually return in the same coops as those in which they are shipped, labor and time may be saved by supplying enough grain, grit and shell to last throughout the return journey.

Arrangements for Shipping.—The exhibitor should first of all become acquainted with the dates of the exhibition, the first day when the exhibition room will be open for birds, and the last minute when they will be received for competition. The most desirable time to have them enter the show room should be determined, as under certain conditions it is better to have them arrive at the first possible moment, while under different conditions one would not want the birds to arrive until the very last moment.

Consult the Transportation Agent.—The transportation agent should then be consulted and the exhibitor should become acquainted with the route, the changes from one route to another, from one car to another, and all other changes involved, whether they mean long delays and whether the birds will be exposed or kept in comfortable rooms, etc. Sometimes information along these lines will make an entire change in the shipping program advisable, as by so doing long waits, poor connections, exposure from weather with chances of storms, may be eliminated, or the chances of the same greatly reduced. The best facilities in shipping should always be sought. Expense should not be the first item considered.

Travel with Your Birds.—When possible to do so without incurring too great expense or making too large sacrifices of one nature or another, it is advisable to travel not only by the same route as the birds do but by the same train. The advantages are many. A small gift or kindly words will often keep coops on a level that otherwise would be tilted sharply, which is of obvious advantage in preserving the good condition of the bird's plumage as well as its tranquility, both of which are essentials when competition is keen. Express cars are very apt to be so overcrowded in the show season, when all coops are going in one direction, that some wait; your coop need not and probably will not if you are present to use gentle suasion. Safe and sane stacking is another comfort that your birds will enjoy if you travel with them, and comfort is necessary for a highly conditioned show bird if it is to remain highly conditioned. While it is usually against the rules of express companies, the writer has often been permitted by the messengers to remain in the car to feed, water and in

some cases exercise the birds. Such attention is naturally beneficial on extended or prolonged trips.

Many appreciable and obvious benefits accrue if you are with your birds and watch them every waking hour. Small advantages tell in the long run and more likely than not, these small advantages, just the barely appreciable things, will turn the scale in your favor.

CHAPTER IV.

CARE IN THE SHOW ROOM.

The largest and most prominent exhibitors accompany their birds to the show room and remain with them throughout the show or hire a competent man to do so. The smaller exhibitors do not usually accompany the birds except at their respective local shows. It often occurs that many birds are shipped a great many miles to important shows and entrusted to the care of individuals employed by the show management. Very often these employees are incompetent because inexperienced in either handling or caring for birds. Undoubtedly, the greatest harm is done by the handling of assistants that are inexperienced and, very often, even uninstructed. Experienced help is always hard to obtain for temporary positions, and no exception to this statement can be made when poultrymen or even men competent to handle show specimens, perhaps only for a few brief minutes, are required. Because of the effect upon their value of even the slightest injury, perhaps merely the breaking of a single feather, particularly, if such is affected by a disqualifying clause and on this account open to suspicion, it is very desirable for an exhibitor to go with, stay with, care for and come home with his birds when it is possible for him to do so without too great a sacrifice on his part. Besides the careful handling that he can bestow, there are many precautions to take against exposure and accident, and many things that one can do to increase the chances of winning. That, to attend to these things is worth while, may be soon proved to anyone's satisfaction by watching closely the movements of the successful and unsuccessful exhibitors. The time of the former class is spent on their birds; that of the latter, generally in social duties.

Delivery.—Every moment before judging is a precious one, as there is much to be done and much may depend upon what is done or not done. First, the birds must be located. If they are scheduled to have arrived and have not, the express company should be at once notified and pressure applied to bring about a quick delivery. As soon as they are delivered, see that they are in a comfortable place. Before the birds are put in the exhibition cages, the cages should be cleaned and supplied with a proper amount of bedding, water, grain and grit.

Clean Cages Important.—It is very important to rub the exhibition cages until free of all dust, dirt, or mould, especially if you have white or light colored birds to exhibit. Otherwise, the plumage becomes so soiled in a very few hours that the birds present a very poor appearance, compared to those who have been washed white and kept clean. Metal cages especially should be thoroughly cleaned before white birds are put in them. Old papers or rags are suitable cleaning agents, though clean rags should be used in the last cleaning operations to insure its thoroughness.

Bedding.—The bedding may be planer shavings, sawdust or straw, but the first two are most often used. The bed or litter should be of sufficient depth to allow the birds to stand comfortably which they can not do on bare boards. From one-half to one inch of shavings or sawdust should be ample, but these must be renewed from time to time for several reasons. First, for cleanliness and sanitation, which includes elimination of odors, offensive alike to patrons of the show and to the birds themselves. The ammonia that arises from unclean litter or bedding is not only disagreeable but may inflame the organs of the bird's nose and throat and become the cause of more serious troubles. Renewal of bedding, daily, is advisable.

Drinking Dishes.—Diseases of the mouth, nose and throat are often transmitted because of unclean and non-disinfected drinking dishes. Before using and before the birds are caged, the drinking dishes should be washed and disinfected or thoroughly scalded, if possible.

Protection Against Drafts.—The doors to the show room are often left open while the birds are being received, and in such a manner as to allow strong drafts in the show room itself or certain parts of it. In locations exposed to drafts,

the birds, if caged, must be protected by covering the tops and possibly the front of cages with paper, or cloth, during that time, and subsequently if need be. If the draft is strong and the temperature low, the birds may be allowed to eat and drink in the show cage and returned to the shipping coop until necessary to feed and water again, or until conditions for caging are more favorable.

Change in Temperature.—Many times, not as much heat is provided during the night as during the day. In such cases it is well to cover the tops of the cages as you are leaving for the night. This not only keeps the birds warmer but darkens the cages besides, and the birds rest better. This plan may be carried farther and the front of the cage covered if the temperature is so low that it seems advisable. With birds of nervous temperament this scheme assists materially in keeping them in good condition.

Feeds and Feeding.—In a large show individual attention cannot be expected of the regular show attendants, and in small shows they are not likely to accord it. For this reason owners or caretakers should take to themselves the duties of feeding as well as other cares. First, because the ordinary feeds of the show room lack variety. Second, it is by no means certain that feeds will be given at the proper time. Third, feeds are not always of a suitable nature, and fourth, not given in the right amounts.

Variety is Necessary.—Show room feeding often consists of giving a supply of whole or mixed grains, usually cracked or whole corn, wheat or oats, perhaps a mixture of all these or of any two, twice a day. Very often this is the entire bill of fare. There is, consequently, a lack of meat, greens, grit, shell and mash, all of which are necessities for a continuance of normal digestion. With a restricted ration, the digestive organs soon become abnormal, a condition that may soon severely affect the good appearance of the specimen.

Meat and Greens in the Show Room.—As a rule feeding in the show room should not differ materially from feeding at home. If the birds have been accustomed to greens and meat at home, greens and meat should be fed in the show room, though not necessarily in the same form. Substitutes of the same general nature will be relished for the sake of variety. No fowl will object to a little Hamburg steak or fresh meat in preference to beef scrap, or to cabbage as a substitute for alfalfa or clover. There may be a slight objection to making

such substitutions on account of expense and because the fowls may continue to demand such palatable foods, once they have acquired a taste for them, but if they are weaned gradually, no harm will result. Lack of meat and greens often results in feather-eating when birds are shown together as in the breeding pen. It is a wise precaution to hang a part of a cabbage or a bunch of lettuce in the top of the cage which contains a breeding pen, of the lighter breeds particularly, to prevent this trouble, and if this is not efficacious, hang up also a small piece of fresh meat. The more busy fowls are kept, the less feather picking is practiced.

Grit and Shell.—Grit and shell may not be absolutely necessary during a short show, but a small supply is often appreciated by the fowls and serves a good and certainly not a harmful purpose.

Overfeeding and Underfeeding.—Overfeeding is more likely than not to be practiced by the novice or by the average inexperienced attendant unless he neglects to feed at all, when he practices underfeeding. Birds are sometimes underfed, not for lack of feed, but because the hall or the coop is so dark that they cannot see to eat. In such cases they must be moved to the light and fed regularly, or perhaps given a grain, the physical nature of which makes it more visible than that which they have been fed. Sometimes, in small shows so many birds are confined in one cage that it is impossible for them to eat. This is false economy as the birds lose rapidly in both weight and condition.

Too Intensive Caging.—There are, also, other disadvantages in connection with too intensive caging. No bird shows to advantage when caged with others, even if only one other, except in case of mated pairs and pens in correspondingly large cages, and the more they are caged together, the more inferior they appear. To properly appreciate a bird, a spectator must see the whole of it at a glance, not a portion. When caged with others and, as is often the case as closely as though being sent to market, the best bird conceivable fails to impress either the onlookers or the judge. Specimens of the finest quality will fail to win for you under those conditions. Consequently, we may conclude that of all the economies practiced in the show room that of caging closely is the most foolish. If prizes are worth anything they are certainly worth the coop fee which is usually about the traditional two-bits.

The specimen is supposed to have been "conditioned" at home. This term, as pointed out, refers to the condition, fit-

ness or good order of the plumage and to general health and state of flesh. Little or nothing can be done in the short time that the bird is in the show room to materially affect any of these conditions. The object of the various measures that have been or may be taken while the bird is within the exhibition hall is to maintain the favorable aspects brought about before arrival.

There remains, after the birds are properly caged and fed, only a few duties that may affect the candidate's chances for honors. These are generally termed the finishing touches, and consist of cleaning the head and adjuncts and the shanks and toes. The latter especially should have been attended to at home as part of the process of conditioning. If not, however, or if either shanks or toes have become soiled in the meanwhile, they should be cleaned and afterwards repolished if necessary. The head and adjuncts may be redressed to advantage as described in the chapter on conditioning for show room.

The exhibitor should, of course, be at all times on the lookout for false, broken, or ragged feathers. By general custom the removal of these is permissible.

After the judging, exhibitors are inclined to relax in their efforts to keep their birds at their best. To a certain extent this is good policy. Birds, no matter how well accustomed to being handled and pampered, will get tired of too much attention and they, as well as the exhibitors, need relaxation. Relaxation, however, should not be carried to the extent of actual neglect in the case of the birds. The regularity and variety of feeding operations should be maintained from start to finish. Nothing whatever should be allowed to interfere with these rules, for neglect in these particulars, even for a day, may affect the bird more seriously later; and at no time should the exhibitor, as a breeder, lose sight of the fact that his best birds in the show room are his best birds at home, as a rule. The value of his flock next season will depend very largely on what these birds which he has in the show room this season will produce. What they produce depends, not alone, on their quality but on their health and vigor which is very easily affected, adversely, by neglect at any time and at any place, at home, enroute to the show, on the return, and again at home. Care that is well calculated to meet these varying conditions and keep the birds at their best, physically, is one of the many essentials of success in the business of producing "the Best" in Standard Bred Poultry.

CHAPTER V.

RETURNING FROM THE SHOW.

Birds that are returning from exhibitions are always shipped by the shortest and most direct routes and always by express, except shipments that are local or so nearly local that they may be taken by the exhibitor's own conveyance or one that he has hired. Freight shipments are too slow and unreliable even for the return journey when, though the exact time prehaps of arrival is not important, the duration of the journey must not be of such length that it is wearisome to the birds being shipped and has, consequently, a detrimental influence on their health.

Low Return Rate.—Generally, a lower rate is secured by allowing the same express company that transported your birds to a show, to handle the return shipment. Usually, two-thirds or three-quarters of one rate is saved thereby, if fully prepaid when the shipment leaves the home office.

A Change in Temperatures.—As to preparing the birds to withstand the return journey, little that has not been may be done now. It should be remembered, however, that the birds have been in a room that ordinarily has been several degrees warmer than a poultry house usually is, at this season of the year, and, therefore, the birds may be a little more sensitive to weather conditions than when they started on the trip to the show; consequently, all the protection that was provided for the first trip should be used for the return. Usually, the birds are shipped out of the show room in the same coop in which they entered it, and the protection would be identical for both trips.

Condition of Coops.—The coops should, however, be inspected to discover any break that may have been incidental to the journey, and if the same is so located as to cause drafts or of such a nature as to afford a possible chance of injury to the fowl, it should be repaired securely before the birds are cooped. The shipper should see that there is ample bedding; if it is the same that was in the coop when it started from home, it should be ascertained to be in sanitary condition, and perfectly dry above all things.

Feeding for the Return Journey.—Grit, or shell, or both should be there in small quantities, and wholesome grains in a sufficient quantity for the needs of the birds during the jour-

ney. All of the above could have been put in the coop before it left home, unless the journey was a very long one. A liberal supply of succulents must not be forgotten. Besides their value as an aid to digestion, they are very palatable and the fowls enjoy them. Like a good meal on a diner, they serve to "kill time" and induce the birds to forget their confinement and discomfort.

As in the case when shipping to shows certain advantages such as more careful handling, quicker transfers if transfers are necessary, better positions and more careful stacking in the car accrue from traveling along with the birds.

Home Delivery.—Arrangements should have already been made for the delivery of the birds immediately after their arrival at the home express office. In large cities deliveries are sometimes slow on account of the distance of the exhibitor's poultry yards from the express receiving station, and often many deliveries have to be made before the yards are reached. When such conditions prevail and the express company's officals are obdurant and cannot be induced to make a special delivery, as they generally can be, however, when a reasonably large shipment is involved, it pays, if the birds are valuable, to employ a truck for the special purpose of obtaining a prompt and direct delivery.

CHAPTER VI.

CARE OF THE BIRDS AFTER THE SHOW.

Changed Conditions.

Though safely home, not all the possible dangers to the birds are over by any means. While in the show room, the birds have become accustomed to comparatively high temperatures and, in all probability, entire absence of drafts; and unaccustomed to cold poultry houses, with cold floors, an atmosphere more or less laden with moisture, and a ventilation system that in all probability is subject to perceptible drafts; conditions that obviously contrast widely.

Gradual Changes.—Manifestly, the birds should not feel the full force of these changed conditions at once. But as a matter of fact, if a little common sense is applied to our methods, and the changes be made as gradually as possible, no harm

seems to result therefrom, and the birds even take up the life of the pen precisely where they left off. A few simple rules, obviously of good sense and judgment, are all that are necessary to follow in ordinary cases to insure these fowls against sickness.

Removing from the Shipping Coops.—It would certainly seem to be unsafe to transfer them from their shipping coops to the poultry houses during the night, early in the morning, or late in the afternoon during severe weather. It would be far more safe to select the middle of a bright, sunny day, if such a day accommodatingly presents itself within a reasonable length of time, as the auspicious time to make the change.

If the birds arrive during the day, they should be taken from the coops long enough to get food and water, and depending upon conditions, be allowed more or less exercise. If the weather is mild, or the poultry house is comfortable, there is no reason why they should not remain there, if contrary conditions are encountered, they should be returned to their shipping coops and if necessary these should be covered. The birds should be, however, again taken from the coops as early as appears to be safe the next morning and may then remain in the poultry house indefinitely, unless it is so cold that they could not remain there under ordinary circumstances without freezing, in which case they should be returned to the boxes, and the boxes covered if necessary. It is much better to take precautions against disease than to be obliged to try to cure it.

Prevent Diseases of the Head.—The diseases that are most apt to be contracted in the show room and during shipment are those of the head, including the nose and throat, and intestinal disorders. To prevent the former, it is well to bathe the head in a slightly warm solution of some good disinfectant, and the throat may be easily cleaned by swabbing it with a flight or secondary feather after dipping the feather in a solution of hydrogen peroxide or listerine and water, half and half. These treatments, especially if repeated two or three times, often prevent such diseases as cold, canker, roup and chicken pox.

To Prevent Intestinal Disorders.—Intestinal disorders are harder to control but much benefit may come from administering a mild laxative as soon as the bird is back from the show; not wholly because that disease may be warded off, but because the general health of the bird may be greatly benefited. It was the practice of a very successful exhibitor, with whom

the writer was long ago acquainted, to give each bird on its return from a show a small cube of beef or ham fat, dipped lightly in red pepper. This seems so simple as to be folly, yet we readily can see that the fat was, because of its oily nature, warming and laxative, while the pepper is known to be a stimulant to digestive action.

The Use of Condiments and Laxatives.—Another equally successful exhibitor and breeder who was most skillful in the care of chickens, mixed equal parts of ginger, charcoal, flowers of sulphur, and powdered charcoal together, added enough melted lard or flour and water to hold the ingredients together, and gave each bird a pill about the size of a large pea. We can understand that this is mildly laxative and stimulating to digestive action. These remedies are mentioned because of their simple, harmless character, and because they are usually available.

Compel Exercise and Feed Lightly.—Aside from these simple precautions, it is necessary to mention but one or two more, and these are so important, so obvious and so well known that it is not necessary to go into very much detail. It is known by every exhibitor that birds, partly because they are overfed and underexercised, become lazy if not dyspeptic during the time they are so closely confined. It is therefore necessary to feed lightly for a few days and in such a manner that the birds must exercise. This is easily accomplished by supplying the same light, yet deep litter that is so necessary to get birds in show condition, or to keep hens laying briskly in the winter months.

Notwithstanding the usual demands of the show room and the incidentals connected therewith upon the physical and mental systems of fowls entirely unprovided for by nature in the original parents, the difficulties of conditioning and showing fowls seems very small and trivial to anyone who has even a very few years of experience in this fascinating sport.

PART FIVE

PRACTICAL POULTRY KEEPING

SECTION I. THE MATURE FLOCK.

Chapter I. HOW TO START.
Chapter II. A BACK YARD FLOCK.
Chapter III. HOUSING THE FLOCK.
Chapter IV. SANITATION.
Chapter V. FEEDING THE BREEDING HENS.
Chapter VI. THE HEALTH OF THE BREEDING FLOCK IN CONFINEMENT.

SECTION II. THE YOUNG STOCK.

Chapter I. HATCHING AND BROODING.
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SECTION I.

THE MATURE FLOCK

CHAPTER I.

HOW TO START.

A WELL KNOWN American humorist once said, "The way to start is to begin," and that applies as well to poultry keeping as to any other enterprise. There is no rule or set of rules for starting in this business which, if followed, will guarantee success, or which, if neglected, is sure to be followed by failure. How well one applies himself to the details of the work and how well he understands the business is far more important and necessary to his success than that he start at any particular time or according to any particular plan or system.

Selecting the Breed.—Undoubtedly the first thing to do is to decide on a variety which has a special appeal to the person about to take up the work of breeding standard-bred fowls. If he decides to breed Plymouth Rocks, he has his choice of all the varieties of that breed which are described in this volume and all of these will give perfect satisfaction if properly bred, housed and cared for. As all varieties are required to have the same shape, the matter of choice is merely one of color. As it is a generally accepted fact that a breeder will do best with the kind he likes best, it is by all means advisable to select the variety of Plymouth Rocks which appeals most to him on account of its plumage, bearing in mind that in selling eggs and stock for breeding purposes, and stock for exhibition, there is more demand for the popular varieties than those that are not so popular.

While many contend that the first thing to do is to build and properly equip quarters for fowls or chicks, it is true that there is no real poultry keeping or poultry breeding until one possesses the chicks or fowls. Many a poultry breeder who now occupies a prominent position in the poultry world started by buying a setting of eggs at a time when he possessed no more equipment than a sitting hen and a box in which to make

a nest. If the start is made by purchasing eggs, the buildings and equipment can be built as requirements demand.

Quality, Health and Vigor.—When starting in this way, the first thing to do is to select the breeder from whom the eggs are to be bought. As distance is no bar, if eggs are packed and handled properly, the main point to be considered is the quality of the stock that the breeder can and will sell. When referring to quality, we mean how closely the stock approximates the requirements of the American Standard of Perfection and described, so far as they affect each variety of Plymouth Rocks, in this book; and also, whether the same stock possesses the health and vitality which is so necessary for success. These things are of equal importance, because one's success as a breeder of standard-bred fowls depends on his having stock good enough to command good prices, and it also depends on his having stock with the health and strength which will make it productive, not only of good color, but of plenty of eggs and meat. It should be particularly noted that it is very difficult to produce the quality of stock in any variety of Plymouth Rocks which will sell for high prices from any except a line, or family, of healthy fowls.

Buy of a Specialist.—It is very satisfactory to see the stock from which one buys eggs if it is convenient to do so, but almost all of the buying of eggs is done by mail and breeders with reputations to sustain can be depended on to deal justly with those who send to them for eggs for hatching. It is always best to buy of a breeder who has a good reputation, because it is difficult to build up such a reputation except by breeding good stock and giving good value when filling orders. Almost invariably the specialist is the best one to buy from, for the specialist has more and better stock of his breed or variety than one who attempts to breed or handle and sell a great many different varieties. This is not intended to cast reflections on the reputable and successful breeder who handles two, three, or even half a dozen varieties and who has succeeded with all of them. Our readers will understand, however, why it is impossible for any man, or associated group of men, to successfully breed, raise and sell high quality stock of many different varieties.

Prices of Hatching Eggs.—Prices should be made a minor consideration. The main point is to get good eggs from good stock and while a few dollars more in the price of the eggs amounts to but little, the difference in the value of the chickens

hatched will amount to considerable as the stock grows up and develops, and is in turn bred from to build up the flock. Poor eggs, or even good eggs from poor or ordinary stock, are expensive at any price, because they make it impossible for the breeder to progress as he must, in order to be successful. In many cases, buying eggs proves a very inexpensive method of getting some of the finest chicks. It frequently happens that a setting of eggs sold for five, ten, or perhaps, in extreme cases, twenty-five dollars produces a single bird which is worth many times the original cost of the eggs. The writer recalls cases in which settings of purchased eggs produced first prize winners at several fairly prominent poultry shows.

Breeding Stock.—To start with, the purchase of breeding stock requires more capital if the stock is first class, but on the other hand a good trio or pen will supply several settings of eggs. There is, moreover, a certain satisfaction in possessing the fowls and considerable pleasure in feeding and caring for them. When adopting this method of getting a start, it is best to buy mature specimens, or at least those which are nearly mature, in the case of young stock. Quarters and equipment must be provided before the fowls arrive. It is just as important to select the variety which appeals most to the purchaser when buying stock as when buying eggs, and it is also just as important to buy from a breeder who has a good reputation for the quality of his stock and whose business has developed to the point where one is justified in believing that it is founded on honesty in his dealings. While this may not be as important when the experienced poultry breeder is purchasing, it is something that the beginner should not overlook.

Here again, the quality of the stock individually and the ability of the family, or line, from which it comes to reproduce its good qualities of shape and color as well as its strength and vitality, are important matters to consider. Inasmuch as the success of a reputable breeder depends considerably on his ability to build up a strain, the individuals of which will breed true to character, we find here another reason for patronizing a man with an established reputation. As such a breeder knows the parentage of the members of his flock, and also how to mate each individual member for the best results, a faculty which is founded on his knowledge of the breeding tendencies of his line, it is always best to have the breeder mate the fowls which the novice purchases. If this is done, the inex-

perienced beginner is relieved of one of the most trying responsibilities of his first season; and if he takes care of his breeders properly and rears the chicks with such good judgment that they grow and develop well, he may be sure of good results the first season. Whether it is best to buy young stock, if it is mature enough to show its quality, or old stock, or a part of each, is less important than whether one gets the right quality. Pens made up of well matured stock hatched the previous spring are often as healthy, as strong, and produce as good results as old birds. Yet such birds are, of course, untried and just what they will produce can not be foretold, whereas the older birds can sometimes be bought with an exact knowledge of what they produced the previous season and what they may be expected to produce in the season to come. While it is sometimes advised and occasionally advisable to mate cocks with pullets and cockerels with hens, there is no well defined rule which must be followed calling for such matings, and no preponderant proof that such matings are best.

If only a certain amount of money is to be spent, it is better to buy a few good birds than many poor ones, or even an ordinary number of birds of mediocre quality. It should be remembered that the stock bought at the beginning is to be the foundation of the flock, and the better the quality of the foundation stock, the faster the value of the flock will increase as its numbers become greater. It may also be remembered safely, when Plymouth Rocks are being considered, that beauty and utility may be found in the same birds. There is no reason why any variety of Plymouth Rocks can not be doubly valuable because it meets the requirements of the Standard of Perfection in shape and color, and at the same time produces eggs in goodly numbers and meat in satisfactory quantity and quality; in fact, there is every reason why these qualities should be found in the same specimens.

When to Start.—When the start is made with eggs, it must be done in the spring or early summer, that is, in March, April, May or the first part of June. Much depends on the use the beginner intends to make of the chicks that are to be hatched. If Plymouth Rocks are wanted for the early fall shows, they should be hatched in March or the first half of April; if to be shown at the winter shows, May is early enough to get them out, and at the late winter shows, those hatched in the first fifteen days in June are frequently among the winners. It is

a fact that the best results are usually obtained when the eggs are bought after the breeding stock has had a chance to get outdoors and exercise in the open air, because chicks from such eggs come out at the time Nature intended they should and all Nature is favorable to them. For this reason, it is best to defer the purchase of the eggs which are to produce next season's breeders until the latter part of April or the first part of May in northern latitudes, and hatch as soon as the grass begins to get green in southern latitudes.

The average beginner buys stock when his interest is highest, that is, generally during the show season, immediately after the show season, or directly preceding the opening of the breeding season, which begins about March first. At this time of the year prices of breeding stock are generally at the highest point because the poultryman has been to the expense of keeping it through the winter and because there is more demand for it. There is an advantage in buying at this time because the stock is usually in good condition for breeding, if supplied by a successful breeder, and the beginner can go right to work increasing his flock. Again he secures his stock in time to hatch chicks early in the season.

One of the best times to buy old stock is in the summer, when breeders are offering lower prices on the stock which they used the season before, and which they do not require for the season following. Young stock can be bought most reasonably in the fall, at about the time when the breeder must put it in winter quarters; but it should not be bought at this time unless it is sufficiently developed to show its quality. An excellent opportunity is sometimes offered to purchase fowls from mated pens, or to purchase entire pens in the late spring after the breeder has secured a certain number of eggs from them, and while there is still time for the new owner to raise a nice flock of chicks. There is no best time to start with the purchase of stock. That depends altogether upon conditions. (H. A. N.)

CHAPTER II.

A BACK YARD FLOCK.

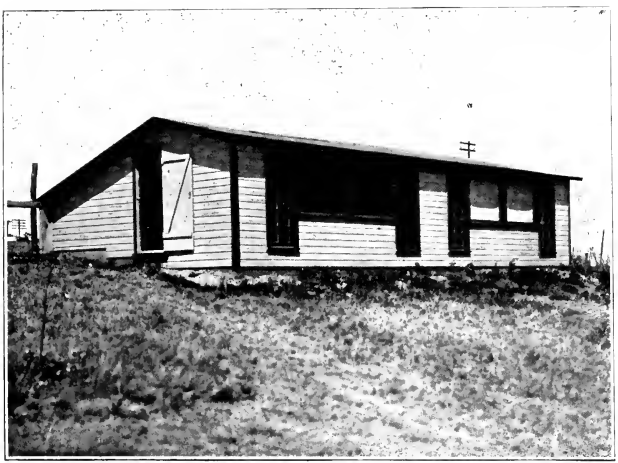
There are interesting possibilities connected with keeping a breeding pen in the back yard, or, if the back yard is big enough, keeping two breeding pens or perhaps more. Limited room is no bar to success if the poultry keeper does his part. The smaller the area to be devoted to a flock of fowls, the more care that flock needs, for the things that the fowls could do for themselves if they had a wide range must be done for them by the owner when they are confined within narrow limits. Naturally, none but standard-bred flocks should be kept, for these not only can be made profitable for eggs and meat, but there may be an added profit from the sale of eggs for hatching and stock for breeding and exhibition, if the breeder has the inclination and ability to breed high class stock. Some of the winners in our largest shows are from flocks that are kept in back yards, where there is room for only a small house and a small yard. If it happens that an owner can place his chicks on a farm where they will receive good care and where they can have the advantage of free range during their growth, he can raise more chicks, and in many cases better chicks, than if obliged to do all the rearing in his small back yard.

Advantages—Poultry Keeping Brings Health.—Back yard poultry keeping is not only capable of making good profits, but it offers recreation of the most healthful kind. Many a man or woman has found improved health by spending, every day, the time needed to care for one of these small flocks, because in doing so that man or woman was compelled to take outdoor exercise.

The boys and girls can frequently be interested in the back yard flock and thereby be induced to spend more time at home in a useful pursuit than they otherwise would. Instances are known where boys and girls have made the profit from a small flock the nucleus of a splendid bank account, which afforded them the means of obtaining an advanced education or a start in business life.

Feeding.—The back yard poultry breeder has one decided advantage. He has enough table and kitchen waste to make up perhaps half the ration for his flock, which reduces the cost of feeding his fowls and adds to his profits. These table and

kitchen scraps can be mixed with a little corn meal and bran and that part of one ration, therefore, costs but little. If preferred, these scraps can be fed separately in a trough, for a lunch at midday. Usually, however, there is more of this material, which is usually excellent for the purpose, than can be fed for lunch only. (H. A. N.)



A Poultry House, after the Maine Model, at University Farm, St. Paul, Minn. The cut shows the curtains open (left) for a mild winter day and closed (right) for severe winter weather.

CHAPTER III.

HOUSING THE FLOCK.

Housing is one of the most important items in poultry keeping. A flock that is not well housed is not comfortable and a flock that is not comfortable is not healthy, profitable nor satisfactory to care for. It is a mistake to expect the same type of house to prove satisfactory under all conditions. Houses that seem to meet the requirement when placed in sheltered locations fail utterly when exposed to the cold winds. Houses that are used in the northern parts of the country must obviously be more warmly built, and are, therefore, more expensive than those used in the South where the winters are mild.

Plymouth Rocks have rugged constitutions and do not require particularly warm quarters, but they must be well protected from the elements and at the same time a reasonable provision must be made for fresh air and sunlight. The fact that they will stand extreme temperatures, when healthy and vigorous, without apparent suffering, is no contradiction of the statement that, if part of their energy and heat is used to combat extreme cold, that same energy and heat can not be used to produce eggs or meat. It is best to keep the fowls comfortable.

Open Front Houses.—What is known as the open front house, that is, the house with the north, east and west sides, as well as the roof, tightly and warmly built and the south side entirely open, can be used satisfactorily in warm and mild climates and sometimes proves satisfactory in sheltered locations in all except the coldest parts of the United States and Canada.

Warm Houses.—In most cases, however, poultry keeping in the northern part of this country calls for houses which can be closed up quite tightly during severely cold nights, and which may be opened sufficiently to let in a plentiful supply of fresh air during the daytime. It will be plain to all that in order to properly protect the fowls and conserve their heat and energy, they must have more protection in cold weather than in warm weather, and that the protection afforded must be at all times in proportion to the severity of the weather; that is, houses must be quite open in warm weather, partly closed in moderately cold weather, and **almost** entirely closed in very cold weather.

The house must be constructed in such a way that the cold can not penetrate it readily, yet the sun can dry it and warm the walls during the bright days, as the sun is the cheapest heating and drying agent that we have.

Houses for Warm Climates.—In parts of the country where extremely cold weather is unknown and in parts even farther south where only moderately cold weather is experienced, buildings which are very simply and thinly built, open on one side and with conveniences for letting in air through one or more of the other three sides, may be constructed.

Simple Construction Best.—The poultry keeper who has at his disposal the rear of a small city lot, or the village poultryman who has a little larger space, will find the simplest house the best in most cases, and also the least expensive to construct. Of all buildings, the shed roof style, with the front about seven or eight feet high and the back about five to six feet high, is the cheapest to build and the one most commonly used. It can be built any width up to sixteen feet and any length desired. It should face south and have one full size upper and lower sash window, hung preferably on weights and pulleys, like the windows in a dwelling, for every eight feet in length, if it is more than ten feet wide, or one window for each twelve feet in length, if it is less than ten feet wide. A house less than twelve feet wide is more expensive to build, in proportion to its capacity, and is not advised except in cases where a narrower house must be used for some reason.

Walls and Roofs.—In the cold parts of the country, the walls and roof of such a building may be built of tongued and grooved boards nailed to a frame work of two-by-fours, and covered with two or three thicknesses of tar paper, then one thickness of any good brand of prepared roofing. This construction, though simple and cheap, makes a wall that is reasonably warm, because it keeps out the cold and is warmed up and dried out quickly when the sun shines on it. Shingles, clapboards, or any kind of siding on the outside makes a better appearing structure and a warm one, but more expensive. In warmer territories, only a single thickness of boards for the walls, with the same and tarred paper or prepared roofing on the roof to make it water-tight, is required. A handsomer finish can also be applied to the same construction.

Ventilation.—This is an important matter, because it is known that the presence of moisture impairs the health of fowls. Fowls throw off quantities of moisture when exhaling and this moisture, together with that which originates from any other source, must be carried out of the building by means of ventilation or currents of air. These air currents, if rapid, cause drafts and drafts in the house endanger the health of the fowls. To prevent these drafts the air must be allowed to enter through the one side only by opening the windows, much or little, according to the temperature and the force of the incoming wind. In some localities, cloth covered frames are placed in openings between the windows and high enough up in the side of the house so that when these frames, which should be hinged at the top, are opened the drafts can not strike the fowls on the floor. These cloth covered frames

FARM POULTRY HOUSE, MINNESOTA MODEL

Windows hung on weights and pulleys serve as ventilators when required. Openings above windows fitted with two sets of doors, each of which can be closed or open, provide constant ventilation.

permit the air to enter and leave the house slowly and provide ventilation when the windows are closed to keep out the wind. In higher houses than we have described, a loft is built in the top of the structure by placing boards an inch apart, high enough to clear the head of the caretaker and covered with a thick bed of straw or hay. Openings are made in the walls of the house above this straw or hay and the air enters and escapes from the house by slowly passing up and down through this material.

No system of flues and pipes will work satisfactorily unless artificial heat is applied to create a draft in them. In warm parts of the country where the buildings have one side entirely open, except perhaps for a wire screen to keep the hens in and other animals out, the ventilation takes care of itself, though frequently it is necessary to have open spaces in other sides of the house to keep it comfortable in the hottest weather.

Other types of poultry buildings, including those with the roof divided into two equal pitches and those with the roof divided into two unequal pitches, can readily be adapted to suit the back yard poultry keeper's needs, if they seem to better suit his convenience and fancy.

Whatever the type of the house, it should be so constructed that it will be dry. If it is on a damp location, or one which is not well drained and likely to be damp at any season of the year, a floor is necessary. If, however, it is on a dry location, the floor may be made by filling in with gravel and sand to a height a few inches above the ground level. The last named method makes the most healthful and the warmest floor.

Interior Equipment.—The equipment of the back yard poultry keeper's hen house should be very simple. The roost platform should be placed two feet above the floor, so that the hens can use the floor space under it, against the north wall of the house and the roosts should be set from six to eight inches above the platform. These roosts may be made of small dimension stuff that is not more than two inches wide on its upper surface, with the corners rounded, or of round pieces not more than three inches in diameter. It should be remembered that when the hen sits down on the roost her toes automatically curl and for that reason the upper surface of the roost must be rounded. If more than one roost is used,

all should be on the same level and far enough apart so that the fowls will not be crowded when the roosts are full.

Nests may be made of ordinary boxes, large enough so that a hen can sit down in them comfortably, and hung on the walls, or they may be made to look better by any special construction and the use of good lumber. Grit and shell boxes, feed hoppers, etc., may be hung on the walls at convenient places and high enough so that the dirt will not be scratched into them by the fowls. (H. A. N.)

CHAPTER IV.

SANITATION.

The average poultry-keeper pays too little attention to the practice of the principles of sanitation, though it is of the greatest importance that these principles should be thoroughly applied in both the poultry houses and yards, because sanitary measures must be practiced assiduously in order to maintain normal health among the fowls.

Every condition that promotes the possibility of disease may be classed as unsanitary and the elimination of such conditions must be accomplished as quickly after discovery as possible, in order that the flock may be kept in perfect health, without which the best results in any of the different branches of poultry culture, as the production and hatchability of eggs, and the livability and growth of young stock, cannot be obtained.

Cleanliness.—This is the most potent agency in promoting sanitation. The vital importance of cleanliness must be accepted as a first principle in the successful management of a poultry establishment, large or small. Manifestly, it is more difficult and laborious to maintain cleanliness when large numbers of fowls or chicks are kept in small houses and runs, than when the reverse is the practice. But, in that case, the necessity is in a proportionate measure more urgent, and in all cases cleanliness, not as a theory but as a condition, must be established and maintained in all parts of the house, including floors, walls, roosts, roost platforms and nests and, particularly, in all watering and feeding devices. Cleanliness prevents disease by removing the germs of disease and the accumulation of filth which is conducive to their increase and development.

The Use of Disinfectants.—The intelligent use of disinfectants is also effective as a method of destroying germs of disease. There are numbers of these that can be relied upon to do the work desired if the directions furnished are followed, but while they serve their purpose nicely, it should be understood that the necessity for their use is reduced or increased as cleanliness is practiced or neglected. When a tolerable degree of cleanliness is constantly maintained, the frequent use of disinfectants will not be necessary, except when disease is prevalent, or unless it is to destroy or prevent the intrusion of lice or mites. Cleanliness of all parts of the house to a degree that insures against ordinary dangers of disease can be acquired by the common mechanical process of cleaning, except in cases of feeding and drinking appliances, which should be scalded or washed in disinfectants occasionally.

Roost platforms should be cleaned at least twice a week, or daily if convenient, and with the roosts should be treated copiously with a liquid disinfectant which is an insecticide as well as a germicide once a month, and at least twice as often during hot weather. The floor litter should be removed and renewed as often as necessary, which is readily determined by inspection.

Care of Grounds.—The sanitation of the small poultry yard is often a serious problem. When the fowls are kept on the same ground for a considerable length of time, disease germs multiply so rapidly in the filth which accumulates, that the ground becomes so contaminated as to become a menace to health. Where the yards are exceptionally small, poultry-keepers sometimes remove the surface of the soil for fertilizer and replace it with new earth. It is also a common practice to spade up the earth, turning the surface under and bringing fresh soil to the top; but even when this is done, the ground sooner or later becomes saturated with filth which nurtures germs of disease.

Fortunately, Nature has provided a way for cleansing filthy ground by means of vegetable growth which may be of service to the poultry-keeper. Wherever possible the back yard poultry-keeper, or any poultry-keeper who is obliged to use a small area of ground, should take advantage of this fact by dividing his yards, so that while the fowls are running in one, some quick-growing, succulent vegetation, which is at the same time purifying the soil and supplying green food, is being produced in the other. As soon as this vegetation in the second yard

has obtained a good start, that yard may again be used by the fowls, and greens planted in the yard first used. By this process the ground can be kept in good condition and a certain amount of green food constantly furnished the fowls in season. (H. A. N.)

CHAPTER V.

FEEDING THE BREEDING FLOCK.

Feeding the fowls from which the eggs for hatching will be secured is a very important matter. Sometimes care and feed which will secure a good yield will not produce eggs that will hatch well, nor which will hatch strong, healthy chicks. When feeding for high production alone, the main idea is to feed the hen a ration that will enable her to produce the most eggs in a given time, and that very often overworks her so that her strength and vitality are reduced to such an extent that she will seldom lay eggs that are suitable for incubation. To produce a strong chick, the egg must not only be perfect so far as table qualities are concerned, but must also possess a strong, vigorous life germ and the proper life-giving material to develop this germ. It will be obvious that both the male and females in the breeding pen must be in good physical condition, or the qualities desired, hatchability of the eggs and vitality of the chicks hatched, will be lacking in the egg produced.

In accordance with Nature's plan, the hen usually waits until warm weather comes and the ground is covered with green grass before eggs are laid and incubated. She then finds health-giving nourishment in form of fresh vegetable matter and has an invigorating atmosphere in which to exercise and build up her powers of reproduction to a high degree —and the same natural conditions favor maximum vitality in the male. Conditions are very different in most poultry yards because the poultry-keeper has found it necessary to hatch earlier than the natural season in order to get the most profit from the chicks and because, in the case of the back yard poultry-keeper in particular, he has not space enough for much grass to grow or to give extended range. The breeding season comes close after the severe winter weather in the northern states, and although it comes earlier in the South, the conditions are approximately the same as related.

It often happens that it is necessary to use the hens for breeding that have been fed for egg production during the winter. The vitality of these hens may have been somewhat reduced by heavy laying. This condition must be met by building up and maintaining the strength of the birds. To do this the methods of management must be arranged and foods selected so as to approach as closely as possible the methods and foods which Nature uses and supplies so successfully later in the season.

A Variety of Hard Grains.—A variety of feed is very important, for it is useless to expect the fowls to obtain from any one or two kinds the many different elements which are needed to build up and strengthen the different parts of the body and to produce the egg as well. A variety of the ordinary grains, as for instance, corn, wheat, and oats, usually supplies the needs as far as grain is concerned.

The feeding of these grains also furnishes an opportunity to compel hens which are in small quarters to take exercise which they naturally get by ranging over the fields in warm weather. The floor should always be covered with a litter of straw, leaves, coarse hay, corn stalks or shavings, and all the whole and cracked grain buried in this litter so that the fowls will scratch vigorously to get it and, by exercising their muscles, increase the flow of blood in their arteries and veins, thus better nourish the different parts of the body. While the fowls are exercising, the windows should be opened sufficiently to allow them to breathe the pure air while at work. In extremely cold weather, a very small opening is all that is necessary to keep the air dry and pure.

Ground Grains or Mashes.—In addition to the hard grain, which is fed as previously directed, a mash, either dry or damp, is usually supplied. Dry mashes are fed in hoppers or boxes which are open to the fowls all or part of the day. Damp mashes are made by mixing the same ingredients which make up the dry mashes with milk or water and are fed in troughs once a day, usually. After each meal the troughs are cleaned and removed. If damp mashes are allowed to remain before the fowls very long, they become sour. When in this condition mashes injure the digestive organs and at the same time are likely to reduce the appetities of the fowls, and a good appetite is very necessary to a healthy fowl.

Animal Foods.—In addition to the ground hard grains, meat-foods and greens must be supplied. The most common

methods of supplying animal food are by feeding beef-scraps or the by-products of milk, though usually it is best to furnish scraps and bone-meal in addition to the milk. With that variety the results are likely to be more satisfactory. Milk can be furnished as a drink, if water is given in addition, or may be mixed in the mash and it may be given sweet, clabbered, whole or skimmed.

Green Foods.—When fowls are confined, green food of some sort to take the place of the fresh green grass and tender young shoots, which the hen gets by ranging freely in the fields in warm weather, must also be supplied. In the early part of the breeding season when the fowls are to be put in condition for breeding the poultryman must depend entirely on mangels, beets, cabbages, sprouted oats and green stuff of that kind. Green-cured clover and alfalfa, ground finely or cut in short lengths, are often added to the damp mash or moistened and fed separately, furnishing green food to some extent, but it does not take the place of the fresh succulence of the greener foods. It will not do to feed mouldy or spoiled vegetables of any kind, and when sprouted oats are used the poultryman should be particularly careful that they do not get musty or mouldy while sprouting.

Too Fattening Rations.—If the fowls are inclined to get too heavy or too fat, the more fattening foods of the ration, like corn and cornmeal, should be reduced in quantity and the muscle-forming elements like bran, clover, alfalfa and meat foods should be increased. This answers better than to give less food if the fowls are eating well, because less food is likely to reduce their strength.

Outdoor Exercise.—When the weather is warm enough to permit, some breeders allow their fowls to get a part of their exercise by scratching in straw which is placed on the ground in front of the house. In some cases the snow is shoveled away for that purpose. (H. A. N.)

CHAPTER VI.

THE HEALTH OF THE BREEDING FLOCK IN CONFINEMENT.

Breeding fowls that are kept in houses or houses and small yards have less opportunity to keep in vigorous health than breeding stock which is allowed free range when the weather permits, or has the run of extensive yards. As we have before mentioned, the only way to secure and maintain health and vigor in a breeding flock is to provide as nearly as possible the things the flock would secure if it were running wild in the natural breeding season.

Healthy Stock.—In the first place, the stock must be healthy to start with. It is a waste of time and money to attempt to breed health and strength into a flock in confinement. With healthy stock to start with and proper surroundings, proper care and proper feed, then health may be maintained to a satisfactory degree; but unless surroundings, feed and care are what they should be, the fowls will weaken sooner or later, and succeeding generations will have less and less vigor as time goes on.

The House.—A healthful house is of the first importance and a house which furnishes the requirements for health is likewise a comfortable house, and a comfortable house is the most profitable house to use. A sufficient amount of ventilation to keep the air reasonably pure, protection from drafts and severe cold, provision for plenty of sunlight in every part of the house, at least during part of the day, are the principal requirements. Under such conditions fowls that are properly fed and cared for will maintain their vitality.

Feeding.—Good feeding is another requisite and good feeding must include sufficient variety of the right kinds of food, comprising whole and cracked grains, ground grains, meat food, green food, grit, charcoal and oyster shells. The grain must be fed in deep litter to encourage exercise, for without exercise no fowls remain healthy. Feeding at regular hours helps to keep the digestive organs of the fowls in good condition and hens that have good digestion are likely to have good health, at least, so far as anything affected by food is concerned.

Management.—Good care is of the utmost importance, and good care includes not only careful methods of supplying feed but careful methods of adjusting ventilation, cleaning and disinfecting the house, etc. Closing the house up too tightly in moderate weather and allowing it to remain too open in severe weather is a prolific source of trouble; colds develop and colds weaken the bird's power of resistance to other diseases. Drafts allowed to blow on the fowls day or night, especially at night when they are inactive on the roosts, will be likely to cause colds in the flock. When kept upon filthy or damp floors or litter, fowls are uncomfortable and soon get into such condition that they are easily affected by any kind of disease germs.

Unclean nests not only injure the eggs laid there but menace the health of the hens. Filthy dropping boards furnish a place for the breeding of germs of disease and vermin. All these fittings should be kept clean and should be disinfected occasionally. Vermin must not be allowed to get a foothold. It not only makes the fowls uncomfortable, but actually tortures them in some cases and by so doing reduces their strength and vitality.

New Blood.—When adding new blood to the stock, extreme care should be taken to obtain the most vigorous and healthy birds, for anything else not only fails to assist in maintaining the health of the flock, but it reduces the necessary vitality. (H. A. N.)

BARRED PLYMOUTH ROCK BABY CHICKS
(Courtesy Minnesota Agricultural College)

SECTION II.

THE YOUNG STOCK

CHAPTER I.

HATCHING AND BROODING.

IN MOST CASES the keeper of a back yard flock depends on the old hen that can cover thirteen to fifteen eggs to do the hatching and she is as often entrusted with the business of brooding the chicks. If the hens begin laying in the fall or early winter, there are sure to be some broody ones among any of the varieties of Plymouth Rocks by March first, which is as early as most poultry-keepers care to set hens. If the hens do not become broody early enough, or if the poultry-keeper prefers to break up those which do become broody in order to get them to laying again, and use their eggs for hatching, a small incubator is a practical necessity. All the high-grade makes will give satisfactory results if properly handled and supplied with good eggs. Furthermore, they are so perfected that they require but little care and are safe and also easy to handle. Inasmuch as complete instructions for operating are supplied with each machine, it is not necessary to describe these methods in this book.

The Sitting Hen's Nest.—Setting a hen is a more important and exacting matter than most people think. Many hatches are spoiled because the nests are not properly made. It is unreasonable to expect a hen to distribute her warmth over a large area and still have enough to incubate the eggs, particularly in cold weather. A warm nest is absolutely necessary and that means that it must be made, or at least lined, with a fine material, such as fine, soft hay and be built in a good, warm box. The sides of the box, however, should not be so high that the hen will land heavily on the eggs when getting down into the nest, or one side must be cut down to allow her to enter easily. At the same time the box must be deep enough to extend well up around the side of the hen's body and of the right size so that the hen will fit snugly to the nest, so that the heat of her body may be adequate for

incubation, even in cold weather. The bottom of the nest should be slightly lower in the center so that the eggs will tend to keep closely together, but if the nest is too deep in the center, the eggs are more apt to be crushed or broken. Just enough gradual drop is necessary to keep the eggs under the hen and in the center of the nest. Less chicks are crushed during hatching in a nest that is flat or almost flat, therefore the nest may be flattened by removing the material on the outside when hatching time arrives, so that the eggs on the outside will not exert too much pressure on the newly hatched chicks, or on the chicks that are partly out of the shell and are located in the center of the nest.

Care During the Sitting Period.—Vermin must not be allowed to exist on a sitting hen, and she should have her plumage treated with lice killing powder just before she is set, and again every six days, the last time at least twenty-four hours before the chicks are expected to break the shell. Usually the hen will do well while sitting if fed on a variety of hard grains, but many poultry-keepers depend entirely on corn, and we have had good results by feeding that grain alone during the incubating period, perhaps because corn is a heating food, and the hen requires considerable of that kind of nourishment to keep up the incubating temperature. To assist digestion a supply of grit and charcoal should always be ready when the hen comes off the nest, as well as plenty of fresh, clean water. The hen should leave the nest once a day, and usually the morning is the best time. The hen knows when feeding times come and is nervous and restless if it is allowed to pass without feed being given her. This results in a complete or partial loss of the eggs. Hence, punctuality and regularity in feeding and care are vitally important.

Care at Hatching Period.—When the chicks are hatching, it is well to remove the empty shells so that they will not cap the unhatched eggs and perhaps prevent the chicks from getting out. When the hatch is complete the hen should be encouraged to stay on the nest for twenty-four hours, after she has been taken off, fed, and returned. In cold weather, the chicks should be covered with a warm cloth while the mother hen is being fed.

Care of Baby Chicks.—When they are from twenty-four to thirty-six hours old, the hen and brood should be removed to the brood coop and it is best to darken the coop at intervals

during the first day so that the hen will brood the chicks frequently and conserve their strength. Unless the weather is warm the brood coop should not be placed outdoors, but should be given a place in a well lighted building which is clean and which has been thoroughly disinfected if necessary. In warm weather the little chicks can be moved to a coop on the warm ground immediately, and should always be given fresh green grassy runs. They should not be put where older broods or fowls have been running earlier in the season.

Feeding the Baby Chick.—The first feed may be stale but not musty or mouldy bread, moistened with milk and then squeezed quite dry, with a little grit and a little finely granulated charcoal sprinkled on it; johnny cake baked hard, crumbled and fed dry; hard boiled egg chopped fine and mixed half and half with bread crumbs; steel cut oatmeal, or any of the numerous, satisfactory rations given to little chicks by

NESTS FOR SETTING HENS, BUILT IN PAIRS

Placed on the ground or floor in any building if secluded. By this arrangement the hens may be fastened on and fed at regular intervals or allowed to come off and go on at will.

successful poultry-keepers. Sometimes the chicks are started from the very first on prepared chick feeds, made from finely cracked grains, and when they can have plenty of outdoor exercise they will do well on such a ration. They should be fed five times a day at the start. Milk is especially good for little chicks, but plenty of clean water must also be provided, for milk will not take its place. A little lettuce or a tender cabbage leaf may be given each day from the first. No better green food can be supplied young chicks than short, tender grass on the sod.

Cleanliness, plenty of pure air, warmth, protection from chilling winds and lots of sunlight are essential to the well being of the little chicks.

The Artificial Method.—If incubators are used, the chicks should remain in the incubator until they are from twenty-four to thirty-six hours old. They should then be removed to the brooder, which should occupy a well-lighted, clean room where there is plenty of sun. The hover should previously have been warmed to a temperature of about ninety degrees. After the chicks are in, their animal heat will raise the temperature under the house from ninety to about ninety-five degrees.

It is advisable to keep the youngsters under the hover most of the time during the first twenty-four hours, letting them out at frequent intervals to become accustomed to the brooder, and to drink a little water and eat a little food. After the first day they may be allowed to go in and out at will, unless they are found to crowd in the corners, when they must be returned to the hover until warm again, for crowding in outside corners always means that they are chilly. The same food that was recommended for chicks with hens will prove equally satisfactory for chicks in brooders. (H. A. N.)

CHAPTER II.

CARE OF THE GROWING STOCK.

After the little chicks are well started on life's journey, under the old hen or in the brooder, it is necessary to see that they have proper care throughout the growing period. A setback at any time in their growth can never be entirely overcome and the more severe the setback, the greater the harm. The brood should be kept with the hen or in the brooder as long as artificial heat is necessary, which is until they are well covered with their chicken feathers and sometimes longer, depending on the season of the year. They may, of course, remain in the same quarters if the weather continues cold and be allowed to run out doors only when conditions are favorable. Unless the accommodations are ample, they are likely to soon outgrow them and more room must be furnished. A brood mothered by a hen can sometimes be kept in a good sized brood coop for a short time after the hen weans them, but they soon fill a coop of ordinary size so completely that they are crowded at night. Before that occurs they should be removed to what are generally known as roosting coops.

Roosting Coops.—These roosting coops are of various sizes, but a common size is six feet long, three feet wide, three feet high in front and two feet high at the rear. If the chicks use these little buildings during the heat of the summer, it is customary to make the front entirely of wire netting or slats, so that the air can circulate freely. To provide protection against the storms and occasional cool weather, especially in the fall, a burlap or cotton cloth curtain is often arranged so that it can be rolled or dropped down to cover the open side, in this way shutting out strong winds and driving rains. This curtain should not be kept down except when necessary for the before mentioned reasons, because at any other time it confines the air too much and makes it too warm for the youngsters.

When the brooder chicks are ready to be put out on the range, that is, when they no longer need the protection of the brooder or colony house in which the brooder is operated, they are usually put into the roosting coops which are distributed over the range. The same procedure is followed in the case of hen-brooded chicks.

Rearing in Restricted Quarters.—The back yard poultry keeper faces a serious situation when attempting to rear chicks, yet good results can be obtained on a small area. If one has no more room than is necessary for the fowls, it is useless to try to raise chicks in his back yard, because chicks cannot occupy the same ground as the fowls and do well; nor can they occupy ground that has been fouled to any extent. Under such conditions, arrangements must be made to have the chicks grown away from home, and care should be taken to get them into the right hands and to be sure that they have suitable quarters and proper feed. If the home quarters are of a fair size, it is possible to grow very good chickens by giving them extra care. The same method of cooping should be followed as if they were on range and the outdoor runs should be frequently spaded over. The location of the coop and yard should be changed every few days if possible, and some small grain which sprouts quickly planted in each spot as soon as it is vacated. As the chicks can not develop muscle and will not be healthy or strong without exercise, they must be made to scratch vigorously in litter for the dry grain part of their ration.

Cleanliness is absolutely necessary in all cases, and the coop must be cleaned at frequent intervals and occasionally disinfected, especially the floor. If, as the chicks grow, they fill the coop to a point where it becomes crowded, the flocks must be divided, for each chick should have ample room to sit on the floor comfortably at night. When the youngsters are half-grown they may be given roosts placed lengthwise of the coop, two being as many as can be used satisfactorily in a coop of the dimensions we have mentioned. These roosts should be of good size, but round enough on top so that the toes of the chicks can curl around them, as Nature intended, when the chicks sit down.

Lice will injure or even destroy a flock of chicks if given any lee-way, and liquid mite killer should be used on the floors of the coops and on the roosts when the roosts are put in. The chicks should be dusted thoroughly with a lice killing powder, if any lice are discovered on them, and one should search industriously for vermin at frequent intervals. (H. A. N.)

CHAPTER III.

FEEDING FOR GROWTH.

There are various methods of feeding growing chicks, many of which are entirely satisfactory. The test is whether or not they produce the desired results. A great many different food elements are required to nourish properly the different parts of the chick's body, and unless food is given in reasonable variety the chick usually cannot obtain, from what is given it, enough of all the elements required to make satisfactory growth. Obviously, if too much fat forming material is given and too little of the material that makes the lean meat and muscle, the chick can not develop as it should. A chick on free range can sometimes overcome mistakes in feeding by collecting from the range the different food elements which it requires but does not obtain from the food provided.

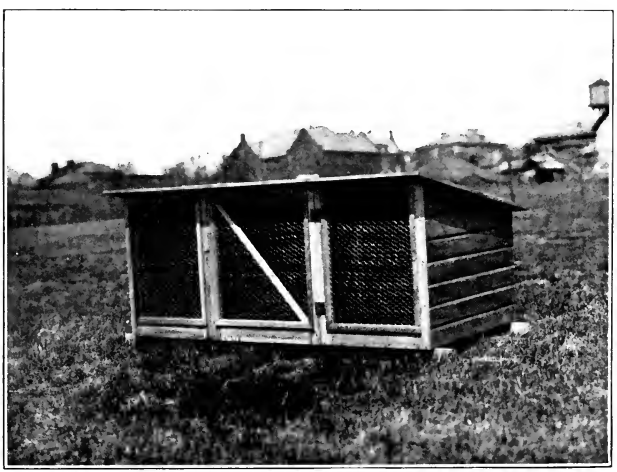
In the back yard poultry keeper's little flock of young, this can not be done, and the owner must be careful to furnish a reasonably well balanced ration.

A good ration for chicks from two weeks to one month old is as follows:

A mash consisting of three parts each (by weight) of wheat bran and cornmeal, one part wheat middlings and one part beef scraps, mixed dry and kept before them in hoppers; a mixture of three parts cracked wheat, two parts finely cracked corn and one part pinhead oatmeal, fed in a litter in order to compel them to scratch for it. During the second month of their lives, the same dry mash may be always available and a mixture of three parts wheat, two parts cracked corn and one part of hulled oats may be given for scratch feed. From the end of that time until they are grown they should have constantly before them in hoppers, a dry mixture consisting of three parts wheat bran, three parts wheat middlings, three parts cornmeal, and two parts beef scraps, and a scratch mixture of equal parts of wheat and cracked corn, if they are on free range. If not on free range, the scratch mixture should be given in a litter, to induce exercise, twice a day. The same mash may be mixed with water, or sweet or sour milk, and fed once a day, in addition, to hasten development.

Very simple rations sometimes prove quite effective when chicks are on free range. A hopper of beef scraps and a hopper of cracked corn constantly in reach is said to grow excellent chicks, the corn furnishing the heating and fattening part of the ration, and the beef scraps the material of which to make solid flesh. Of course, the chicks pick up the green stuff and other food on the range. We would not advise anyone to feed such a ration to chicks confined in yards, because, if there were no other arguments against it, it is plain that the chicks would soon tire of it.

Chicks in yards must always be furnished green stuff once each day, but none should be allowed to remain after they have satisfied their appetites, because it soon becomes unwholesome. Grit and charcoal should always be available and plenty of fresh water must be furnished. If milk can be given them to drink in addition to water, better growth will result. (H. A. N.)



COLONY COOP FOR YOUNG CHICKS

Design from Minnesota Agricultural College. Capacity three or four hens and 50 or 60 small chicks. Later twenty-four larger chicks. Wire front can be protected during stormy weather by bran sacks at either end.

PART SIX

UTILITY FEATURES OF THE PLYMOUTH ROCKS

SECTION I. MARKET QUALITIES OF THE PLYMOUTH ROCKS.

Chapter I. THE TERM "UTILITY" EXPLAINED.

Chapter II. THE PLYMOUTH ROCK AS A GENERAL PURPOSE FOWL.

Chapter III. THE PLYMOUTH ROCK AS A MARKET FOWL.

Chapter IV. THE PLYMOUTH ROCK AS A TABLE FOWL.

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SECTION I.

MARKET QUALITIES OF THE PLYMOUTH ROCKS

CHAPTER I.

THE TERM "UTILITY" EXPLAINED.

THE CHAPTER ON THE utility feature of the Plymouth Rock fowl may very well contain a definition of what is meant by the term "utility." It is so often misused that, far contrary to its real meaning, it has come to mean to many not much more than lack of Standard quality. This is due to the fact that it has become a custom among fanciers to sell or offer for sale all the stock that does not meet the requirements of the Standard of Perfection in a degree to meet the approval of those that buy it on that basis as "utility" stock, or eggs from such stock as "utility" eggs. In many cases, not only the quality but the vitality of such stock has become so inferior that the term has fallen into disrepute. "Utility-stock" now means to a great many who have perhaps suffered in their transactions along this line with unprincipled breeders and dealers, and we are thankful that it is usually the latter, simply something that is unfit to sell as Standard-bred stock. This application of the word is to be regretted as "Utility-stock" should be desirable stock that is useable for its purpose, and the word **utility** should be held to its original meaning when it applies either to breeding or to sales.

"Utility-stock" is that which yields a useful product. The utility products from poultry are two only, flesh and eggs. Stock that will produce progeny of a superior meat quality, or that grows and produces flesh more rapidly than does ordinary stock is entitled to the term "utility," and such stock does not discount itself or discredit the term.

"Utility-stock" should have utility quality, and should not be confused with Standard-bred specimens of poor quality. To be such is the result of accident very often. To improve any

quality in any stock, the most satisfactory results are obtained by selecting for that quality.

Standard-bred Fowls, Useful.—It is a noteworthy fact and the most convincing refutation to any imputation that Standard-bred poultry is ornamental rather than useful, that in the beginning all of our American breeds originated with men who were interested in poultry in a practical way and not as fanciers; consequently, these breeds took on at the start a practical rather than a fanciful aspect. Both aspects have been improved. That our American breeds, including all varieties of Plymouth Rocks, have improved in appearance, everyone interested is aware, but that they have improved in usefulness and productiveness some may not be disposed to admit, yet all available records, both public and private, show such an enormous advance in these respects as to be almost incredible, not only to those skeptically inclined but to all, except the comparatively small number who because of business or other interests follow the results of such tests most closely.

It should not be concluded from the foregoing statement that fowls should be bred to improve in one particular alone; although it often happens that a specimen of the most pronounced degree of excellency in a certain particular is often so deficient in other requirements that no one of good judgment would use it in a breeding capacity, and for that reason alone it often happens that we do not acquire one quality as rapidly or in as marked a degree as though we limited our selections for that one quality alone.

Yet rapid growth and laying qualities are very dependent upon health and vigor, and when selections for these qualities are the rule, more productive fowls are bred.

CHAPTER II.

THE PLYMOUTH ROCK AS A GENERAL PURPOSE FOWL.

The shape of Plymouth Rocks required by the Standard of Perfection is such as to insure the highest quality as a table and general purpose fowl. The "rather long" back, which is "broad its entire length"; the "broad, full, moderately deep, well-rounded" breast and the rather "long, broad, deep, full" body which extends "well forward", guarantee the largest proportion of edible flesh and the least waste in bone, feathers and refuse. The long keel bone, the plump breast and large thighs, all of which are well covered with tender flesh of finest texture, give the exceptional quality desired for table use to the choicest portions of the bird.

The shape of the body also affords ample room for large and vigorous egg organs and a digestive system which is conducive to high egg production. They produce large numbers of brown shelled eggs and also produce flesh rapidly. They are rapid growers, quick to mature, and fatten easily.

The economic value of the breed is shown by its wide scope of usefulness. They are well suited for pleasure or profit; for a city lot or for the farm; for the show room or for commercial purposes. It matters not what may be wanted, broilers, roasters, mature fowls, capons or layers, Plymouth Rocks possess qualities which recommend them if they have been selected and bred according to standard requirements. Birds of this breed are of a quiet, gentle disposition and they are easily confined.

Because of their combined market qualities and egg laying ability, the Plymouth Rocks are recognized as a great dual purpose or general purpose breed.

Plymouth Rocks are faithful sitters and good mothers. They are active as well as good foragers, and will find a good portion of their living if given the opportunity. Their combs being of medium size and their bodies rather blocky, compact and well feathered, they are prepared to withstand severe weather. Their type is one that is symbolical with great vigor, and is well adapted to varying conditions; it is also one which combines many desirable qualities in one fowl.

The chicks reach maturity quickly and some pullets have been known to lay at five months of age. It is not advisable

to force them too rapidly for fear it will stunt their growth, that is, it is not best to force early laying at the cost of size, bone and muscle, if the pullets are to be used subsequently as breeders; but if they are intended for broilers or roasters, they may be fed heavily on growing and fattening foods, upon which they will develop very rapidly and reach the broiler age in nine to fifteen weeks, depending upon the size and type of broilers desired. (T. E. Q.)

CHAPTER III.

THE PLYMOUTH ROCK AS A MARKET FOWL.

The fact that the Plymouth Rock rapidly gained popularity and still is the most popular breed of poultry among farmers simply means it has stood the test for more than a quarter of a century and has not been found wanting. A farmer's fowl which represents ninety per cent of the entire poultry crop of the continent is no mean fowl. A farmer wants meat as well as eggs. Step into almost any special finishing or feeding plant and watch the superintendent smile when a crate of Plymouth Rocks arrives or go into the dressing room or finally into the dressed poultry boxes. Ask a dealer to see a sample of the boxes of dressed poultry of prime quality that he has to offer the trade and in nine cases out of ten he will show a box of Plymouth Rocks. All of which must mean that to date the Plymouth Rock is still America's banner market chicken. It has stood the test of time and is yet the market fowl.

What is there to the Plymouth Rock that makes it so popular as a market bird? First they are vigorous. That is, they withstand disease and are good feeders. You do not want a bird that is not a good feeder. Fowls, the whims of whose appetite you have to study hourly, will never stand the test of time. The Plymouth Rock is a good feeder, and stands second to no breed under forced feeding or special finishing. Right here is where its abundance of vigor comes worth while.

The second consideration is that the lean meat or muscles are well distributed over the various parts of the body. The breasts are well muscled. There are very few Plymouth Rocks with long, high, bare breast or keel bones. There is fair dis-

tribution of both light and dark meat. Hence the dressed birds please the various tastes of the average family. Everybody does not want white meat, very few want a hard, dry, unbitable chicken, whether it is dark or light meat. The grain of the Plymouth Rock flesh is such that it tends to be juicy and tender.

The third consideration, is that as a breed Plymouth Rocks are smooth skinned and elastic fleshed. They have a pleasing appearance when dressed. The skin of the bird, when the feathers are removed, does not present the appearance of a horse-radish grater, but is smooth and mellow. This adds very much to the attractiveness of the dressed carcass and also is one of the best quality indicators.

Last, but not least, the fact remains that in the dressed poultry shows held in this country, Plymouth Rocks have won more sweepstake prizes than all the other breeds. They are year after year the outstanding dressed fowls in the shows.

A breed of poultry which pleases the large packer and makes money for him, which is bred more than any other breed by the farmers, which wins sweepstake prizes at dressed poultry shows and is constantly selected on the market by intelligent housewives, needs no argument as to its position or qualification as a market bird. The fact that it is still the most popular fowl among over one hundred competitors and has been the popular fowl for over a quarter of a century simply means that it is well rooted and is bearing a satisfactory crop annually. (W. R. G.)

WHITE PLYMOUTH ROCK CHICKS
(Courtesy Minnesota Agricultural College)

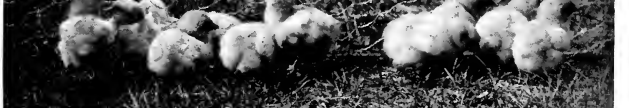
CHAPTER IV.

THE PLYMOUTH ROCK AS A TABLE FOWL.

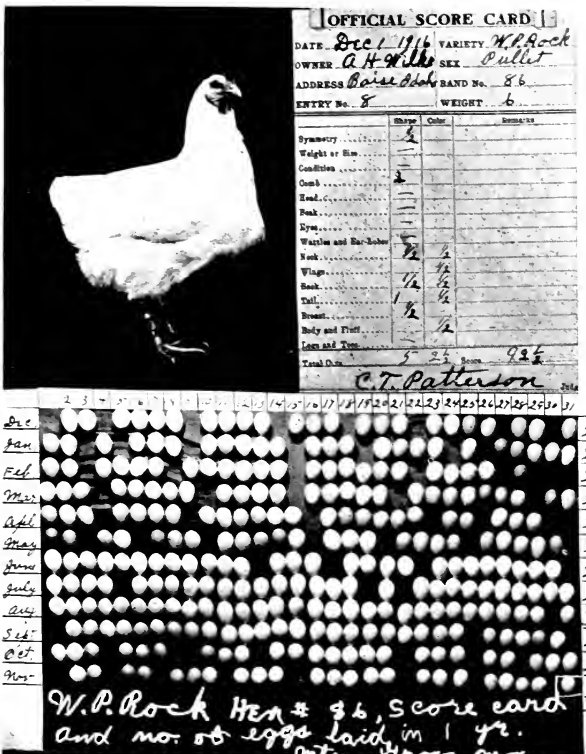
When the bird has been properly fattened and dressed, its beautiful rich yellow skin and plump carcass never fails to attract attention and favorable comment and to command the highest market price, because it is characteristic of the breed that after the birds are plucked few undesirable pin feathers are left to detract from their appearance.

Every part of the Plymouth Rock's body is well covered with meat which is rich in flavor, fine in texture, and, when milk-fed or raised under proper conditions and fed abundantly, is extremely tender and juicy. The breast and thighs, which are recognized as the two choicest portions of the bird for table use, are especially well covered with flesh. These exceptional market qualities, combined with their great egg laying ability, class them as one of the greatest American breeds.

Note.—The qualities, as related by Messrs. Quisenberry and Graham, are ample explanations as to why the large packers and feeding establishments favor Plymouth Rocks over all other breeds. This point brought out by Mr. Graham, the editor has taken the pains to verify. Furthermore, these concerns agree that the Plymouth Rock leads all other standard breeds in numbers received and easily.



BUFF PLYMOUTH ROCK CHICKS



A White Plymouth Rock pullet that combined standard and high egg-producing qualities in a remarkable degree.

SECTION II.

CHAPTER I.

PLYMOUTH ROCKS AS PROLIFIC EGG PRODUCERS

PLYMOUTH ROCK EGGS.

ALL VARIETIES of Plymouth Rocks should lay moderately large, tannish brown eggs. Eggs which weigh twenty-four ounces to the dozen are recognized as standard in weight, but the average Plymouth Rock pullet lays eggs which exceed this weight. As hens, they usually lay a slightly heavier egg, some averaging as much as twenty-eight ounces or more to the dozen. In shape, the egg is spherically oblong, tapering slightly to one end.

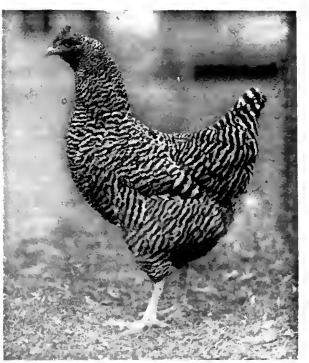
The Plymouth Rock egg has a quality of contents, and a thickness and texture to the skell by which it is assured of carrying well while being shipped to market and also assures the minimum amount of evaporation while being held for hatching, for market or in storage.

Uniformity of shape and color, and freeness from wrinkles, rough places and thin shells should be sought for by all breeders. Uniformity largely controls the appearance, and appearance seriously affects the selling price.

Some families or flocks of so-called Plymouth Rocks lay eggs which are very much under-sized, misshaped, thin shelled and of many colors. The country abounds in flocks of this kind which, though they bear a certain resemblance to standard-bred Plymouth Rocks, usually the Barred variety, are far from having the qualities of the latter and are, in fact, very inferior in size, productiveness and appearance, and they are not standard-bred Barred Plymouth Rocks though often mistaken for the latter.

The qualities of the eggs can be controlled to a large extent by the breeder. By selecting and hatching from eggs of the desired shape and color, and by using only males and females for breeding purposes which have been hatched from such eggs, one can soon establish a flock that will produce

eggs that possess these qualities to a reasonable degree of certainty. See that all eggs for hatching weigh two ounces or more, and are of the perfect shape desired, and with firm, sound shells and of uniform color. Such care in selection and breeding for two generations will make a remarkable difference in the qualities of the eggs, and if continued, will insure the production of a very large per cent of eggs which meet the market requirements for Plymouth Rock eggs. (T. E. Q.)



Barred Plymouth Rock Pullet No. 5501, Purdue University Experiment Station. Record, 166 eggs in 182 days. December to May, inclusive.

CHAPTER II.

PLYMOUTH ROCKS IN LAYING CONTESTS.

The egg laying competitions which have been held in America have proven not only that Plymouth Rocks lay a sufficient number of eggs to make them profitable as egg producers, but in every instance that Plymouth Rocks are among the best as layers. They have also demonstrated the facts that Plymouth Rocks are good layers in winter when eggs are highest in price; that they begin to lay when from five to seven months of age; and that they lay well in the fall months or during what is generally recognized as the moulting season.

Plymouth Rocks, as a rule, make a good yearly average and an especially even distribution of their eggs throughout the year. There is no season of the year that they do not produce a reasonable number of eggs. In one contest the Plymouth Rocks distributed their eggs throughout the year as follows:

30.2 eggs per pullet in December, January and February.
62.4 eggs in March, April and May.
45.3 eggs in June, July and August.
27.1 eggs in September, October and November.

All varieties of Plymouth Rocks collectively, have averaged from one hundred and forty to one hundred and ninety eggs per hen each year in practically every contest which has been held in this country.

In one contest the pullets which averaged five pounds in weight, averaged one hundred and seventy-six eggs each; those weighing six pounds averaged one hundred and fifty-eight eggs each; those weighing seven pounds averaged one hundred and forty-two eggs; and those weighing eight pounds averaged one hundred and twenty-two eggs. This would indicate that the females slightly under standard weight were the best layers, but nevertheless, it is best to adhere to standard weight in breeding as much as possible, otherwise, in time, the breed might become too small to be classed as a general purpose fowl.

The highest record ever made by a pen of any variety in the National Contest at the Missouri State Poultry Experiment Station was made by a pen of Barred Plymouth Rocks,

the five pullets laying one thousand one hundred and eighty-five eggs, or an average of two hundred and thirty-seven eggs per bird in twelve months. Barred Plymouth Rocks won the highest honors for two years in succession at this contest.

The highest individual record ever made by one pullet of any variety at the same Experiment Station was made by a White Plymouth Rock which laid three hundred and four eggs during the year. This bird also scored ninety-two and one-half points. A Barred Plymouth Rock in the same contest scored ninety-two and one-half points and laid two hundred and fifty-four eggs. Buff Plymouth Rocks which laid over two hundred eggs in the same contest also won prizes at the Panama-Pacific International Exposition Show. These facts plainly show that high scoring Standard Bred Plymouth Rocks can also lay large numbers of eggs.

In the American Egg Laying Contest, the highest scoring Plymouth Rocks proved to be the best layers. Plymouth Rocks led throughout most of this contest.

In the North American Contest at the Delaware College of Agriculture and in previous contests pens of Barred, White, Buff and Columbian Plymouth Rocks averaged more than two hundred eggs per bird, or over one thousand eggs in a year from a pen of five pullets. The highest individual records made in this contest by birds of this breed were as follows:

White Plymouth Rock	247 eggs
Buff Plymouth Rock	250 eggs
Partridge Plymouth Rock	200 eggs
Columbian Plymouth Rock	287 eggs
Barred Plymouth Rock	283 eggs

In the International Egg Laying Contest at the Connecticut Agricultural College, it was found that only one breed laid eggs that exceeded those of the Plymouth Rocks in size. Only one breed lost less time in broodiness than Plymouth Rocks. If the birds had been marketed at the close of the contest, alive or slaughtered, the returns from the Plymouth Rocks would have exceeded all others. In the sixth Annual Contest held at that place, the best laying pen of Plymouth Rocks were of the Barred variety and the ten pullets laid two thousand, one hundred and nineteen eggs during the year. The best individual record was by a Barred Plymouth Rock that laid 277 eggs.

In the International Egg Laying and Breeding Contest conducted by the New Jersey Experiment Station, a White

Plymouth Rock won first place, with a record of three hundred and one eggs; a Columbian Plymouth Rock was in third place, with two hundred and eighty-eight eggs to her credit; and a Barred Plymouth Rock won fifth place, with a record of two hundred and seventy-eight eggs; three of the highest records being made by Plymouth Rocks, with one thousand pullets of different varieties competing; the best Plymouth Rock pen records of ten birds each being as follows: Barred Plymouth Rock, 1956 eggs; White Plymouth Rocks, 1985 eggs, and Columbian Plymouth Rocks, 1854 eggs.

The Plymouth Rocks entered in the First All Northwestern Egg Laying Contest demonstrated their winter laying qualities and ranked among the breeds as follows:

From October 15th to October 30th, 1916, second in average egg production per fowl.

For the month of November, second in average egg production per fowl; second in actual profit per average fowl.

For the month of December, third in average egg production per fowl.

For the month of January, 1917, first in average egg production. (T. E. Q.)

PARTRIDGE PLYMOUTH ROCK CHICKS

At the left, the White Plymouth Rock hen, Lady-Show-You, No. 717 in the Mountain Grove (Missouri) egg-laying contest, November, 1911, to November, 1912.

Lady-Show-You sold for $800 after making a record of 281 eggs in twelve months. Even with this number to her credit, Lady-Show-You did not lay an imperfect egg. The industry that is characteristic of a good layer was displayed in this case. Lady-Show-You invariably spent the day out of doors if allowed to do it, and usually laid early in the morning. She also shows the conformation we expect to see in a good layer, broad across the hips, large in heart girt. When handled, her body feels firm, well filled out and muscular.

At the right, a Barred Plymouth Rock hen with a high and very creditable egg record and which shows much the same type as the White Plymouth Rock.

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